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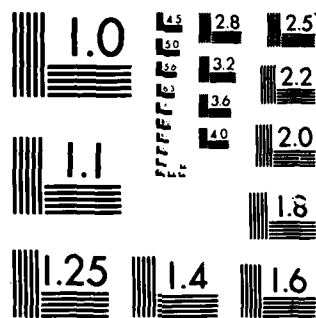
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**IRIG STANDARDS FOR
RANGE METEOROLOGICAL DATA REDUCTION
PART II - ROCKETSONDE**

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IRIG STANDARD 352-85

**IRIG STANDARDS
FOR
RANGE METEOROLOGICAL DATA REDUCTION**

PART II - ROCKETSONDE

Prepared by

**Standardization of Range Meteorological
Data Reduction Committee
Meteorology Group
Range Commanders Council**

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FOREWORD

The measurement of atmospheric parameters to support activities on National Ranges involves the entire meteorological environment from the most simple observation of data near the surface to the complex and difficult measurements of high altitude parameters by the use of rocket and satellite-borne instrumentation. The needs for accurate assessment of the meteorological environment in which missile and space system operations are conducted do not vary significantly from one range to another, though the frequency and quantity of observations may be considerably different. In recent years, many test programs involved the use of more than one range and required similar types of meteorological measurements from each range participating.

Measurements of the atmospheric environment are, in most cases, made by use of the same type of instruments on several ranges. To ensure the highest quality processed data, the Meteorology Group (MG) of the Range Commanders Council (RCC) is assigned the task of standardizing the methods used in the reduction of range meteorological data. A committee composed of the following members was formed to pursue a task titled "Standardization of Range Meteorological Data Reduction":

Mr. H. C. Herring	ESMC, Chairman
Mr. F. J. Schmidlin	NASA/WFC
Mr. G. Dunaway	WSMR
Mr. E. J. Keppel	AD
Mr. J. G. Boire	WSMC
Mr. J. A. Lea	PMTC
Mr. E. E. Fisher	AFSC
Mr. H. S. Noonan	AFFTC
Mr. R. W. Evert	NWC
Mr. A. Titus	NTS/DOE
Mr. M. E. Raffensburger	UTTR
Mr. E. Gibeau	KMR

The original issue of Part I of this document was published as IRIG Document 108-67 in August 1967. Both Parts I and II of the document were later published as IRIG Document 108-72. The current revision of the document is comprised of computer program documentation for two different computer systems. The program in section A is used by a large central computer to process data from either nontransponder or transponder rocketsondes. The program in section B is for the minicomputer (NOVA-3/12) of the Meteorological Sounding System (MSS) and is used for processing data from the transponder rocketsondes.

The U.S. standard computer program for the processing of Robin Falling Sphere data to calculate winds, temperatures, pressures and densities is the 1977 UDRI Robin Program. Other programs should be considered experimental and not used in lieu of the U.S. standard at the present time. In the future, providing adequate comparison experiments are conducted on some of the newly developed falling sphere programs which may show improvements over the U.S. standard,

the RCC MG committee on Standardization of Range Meteorological Data Reduction may recommend a new U.S. standard or approve other programs for use in addition to this standard for certain special applications.

Range meteorological agencies are encouraged to conform to the standard data reduction techniques and to use the formulae contained in this document in an effort to achieve the highest possible degree of standardization of meteorological data at all ranges. In addition, the committee encourages other agencies involved in machine processing of meteorological data to conform to these standardized procedures to the maximum extent possible. The committee and the MG invite and solicit comments and recommendations for improvements in the data reduction techniques and associated information contained in this document. Please forward such inputs to the Secretariat, Range Commanders Council, ATTN: STEWS-SA-R, White Sands Missile Range, New Mexico 88002-5002.

ROCK 3

SECTION A

CDC FORTRAN V

ROCKETSONDE PROGRAM

(ROCK 3)

ROCK 3

ABSTRACT

The Rocket Reduction Program is designed to process data acquired by standard Loki and Super Loki rocketsondes. This program accepts input data taken from the AN/TMQ-5 record and the strip chart from the MSS Tracking System, a radar and/or AN/GMD-4 Rawin Set, plus co-rawinsonde baseline data. The program processes input data and outputs as its final product rocketsonde data in readily usable tabular format; card decks, if desired; and rocketsonde message code (ROCOB).

ROCK 3

1.0 MODULE DESCRIPTION

1.1 Program ROCK

Initializes data control arrays and controls flow of data through the subroutines.

1.2 Subroutine SIMQ

A least squares method of smoothing, provides a best fit of the components by generating a second-degree polynomial equation.

1.3 Subroutine OUTPUT

Formats the data for output.

1.4 Function WDIR

Computes wind direction in polar meteorological coordinates and windspeed in meters/second.

1.5 Function VALUE

Sets missing data to nines or interpolates for value.

1.6 Subroutine GRAVITY

Computes the ratio of the station's acceleration of gravity to gravity at 45 degrees latitude using the expression given at the top of Table 168, *SMT*, List 1968 (Bibliography Number 1).

1.7 Subroutine CHKOUT

Prints the tracking data in quality control format. Converts tracking data to Cartesian coordinates and writes data to a file.

1.8 Subroutine RD46CH

Reads the radar data and converts time to units and format consistent with TAER format.

1.9 Subroutine TMPMERG

Identifies type of temperature data, computes temperature from ordinate ratios, and combines temperature with tracking data versus time.

1.10 Subroutine INTPTMP

Identifies missing temperatures and interpolates to obtain temperatures through layers of less than 3.0 km thickness.

1.11 Subroutine MIDINT

Computes the midpoint of altitude layers and calculates uncorrected component winds and fall rates for the layers between data points. Component winds and fall velocities are assigned to the midpoint of the layers.

ROCK 3

1.12 Subroutine BANDTC

Computes ballistic motion corrections for correcting winds according to Eddy (reference 3 in bibliography). Temperature corrections are computed for correcting temperatures as described in attachment 9 (reference 4 in bibliography).

1.13 Subroutine COMPSR

Computes and tabulates the difference in temperatures from the co-rawinsonde observation and the rocketsonde observation in the overlap region. Chooses a baseline for barometric pressure computations.

1.14 Subroutine TWOKM

Smooths component wind layer data over 2-km thicknesses producing 2 km-mean layer winds.

1.15 Subroutine PRESCOM

Converts geometric altitude to geopotential units, computes mean virtual temperature, and computes the atmospheric pressure using a standard form of the hypsometric equation.

1.16 Subroutine ONEKILO

Rearranges data in a 1-km array and computes maximum altitude recorded by sounding.

1.17 Subroutine PLOTCH

Plots temperature versus altitude as an aid to quality control.

1.18 Subroutine PUTOUT

Outputs data to the printer file and the disk file.

1.19 Subroutine ETFORM

Formats data for entry into high altitude data formatting routine to develop data for archiving and publication.

1.20 Subroutine CODIT

Corrects units of temperature and converts other data.

1.21 Subroutine RDRAWIN

Reads co-rawinsonde data for input to the archiving and publication formatting program.

1.22 Subroutine INT

Interpolates for missing data in the input data.

ROCK 3

1.23 Subroutine ROCOB

Encodes all rocketsonde parameters into the international ROCOB code and stores data for later transmission.

1.24 Subroutine MANDL

Mandatory data level called by ROCOB to place data level into proper place in the code.

2.0 MATHEMATICAL DESCRIPTION

2.1 Program ROCK

None

2.2 Subroutine SIMQ

None

2.3 Subroutine OUTPUT

2.3.1 Computation of the Density of Each Level

$$\rho = 348.38 \cdot (P/T)$$

where ρ = density (grams/cubic meter)

P = pressure of the level (millibars)

T = temperature of the level (degrees K)

2.3.2 Computation of the Velocity of Sound (Dry)

$$V_s = 331.45 \cdot (T/273.15)^{1/2}$$

where V_s = velocity of sound (meters/second)

T = temperature (degrees K)

2.3.3 Computation of Vertical Wind Shear

$$WS = [(VX - VXP)^2 + (VY - VYP)^2]^{1/2} / \Delta ALT$$

where WS = vertical wind shear

VX = corrected east-west velocity component

VY = corrected north-south velocity component

VXP = corrected previous east-west velocity component

VYP = corrected previous north-south velocity component

ΔALT = thickness of the shear layer

2.4 Function WDIR

2.4.1 Computation of Wind Direction

$$DC = \tan^{-1} (VY/VX)$$

If VX is positive,

$$D = 90 - DC$$

If VY is negative

$$D = 270 - DC$$

where D = wind direction, meteorological polar coordinates

DC = wind direction, Cartesian coordinates

VX = corrected east-west velocity component

VY = corrected north-south velocity component

2.4.2 Computation of Windspeed

$$C = (VX^2 + VY^2)^{1/2}$$

where C = windspeed (meters/second)

VX = corrected east-west velocity component

VY = corrected north-south velocity component

2.5 Function VALUE

None

2.6 Subroutine GRAVITY

2.6.1 Computation of the Ratio of Local Gravity to Gravity at 45 Degrees Latitude

$$GRAT = 1 - 0.0026373 \cdot \cos(2 \cdot \phi_L) + 0.0000059 \cdot \cos^2(2 \cdot \phi_L)$$

where GRAT = ratio of local gravity to gravity at 45 degrees latitude

ϕ_L = station latitude (degrees)

2.7 Subroutine CHKOUT

2.7.1 Computation of Differences for Time, Azimuth, Elevation, Range, and Height Between Adjacent Levels

$$\Delta G = 60 / (GA - GB)$$

$$\Delta Z = (ZA - ZB) \cdot \Delta G$$

$$\Delta \phi = (\phi A - \phi B) \cdot \Delta G$$

ROCK 3

$$\Delta\theta = (\theta A - \theta B) \cdot \Delta G$$

$$\Delta R = (R A - R B) \cdot \Delta G$$

where ΔG = difference in time in fractional parts of minutes

ΔZ = difference in geometric altitudes

$\Delta\phi$ = difference in elevation angles

$\Delta\theta$ = difference in azimuth angles

ΔR = difference in range

$G A$ = time of upper level (seconds)

$G B$ = time of lower level (seconds)

$Z A$ = altitude of upper level (meters)

$Z B$ = altitude of lower level (meters)

ϕA = elevation angle of upper level (degrees)

ϕB = elevation angle of lower level (degrees)

θA = azimuth angle of upper level (degrees)

θB = azimuth angle of lower level (degrees)

$R A$ = range of upper level (meters)

$R B$ = range of lower level (meters)

2.7.2 Computation of Geometric Height

$$Z = [(R E + H_T)^2 + R^2 + 2 \cdot (R E + H_T) \cdot \sin \phi]^{1/2} - R E$$

where Z = geometric height (meters)

$R E$ = radius of the Earth (meters)

H_T = station height (meters) (see paragraph 7.4)

ϕ = elevation angle of the target (degrees)

R = slant range to target (meters)

2.7.3 Correction of Elevation Angle for Curvature of the Earth

$$\phi_c = \phi + \{[Z \cdot \cos \phi / \sin \phi] / 2.2 \cdot R E\}$$

ROCK 3

where ϕ_c = corrected elevation angle (radians)
 ϕ = elevation angle (radians)
 Z = geometric height (meters)
 RE = radius of the Earth (meters)

2.7.4 Computation of the East-West and North-South Position Components for Each Data Point

$$X = R \cdot \cos \phi_c \cdot \sin \theta$$

$$Y = R \cdot \cos \phi_c \cdot \cos \theta$$

where X = east-west position component
 Y = north-south position component
 R = slant range to target (meters)
 ϕ_c = corrected elevation angle (degrees)
 θ = azimuth angle of the target (degrees)

2.8 Subroutine RD46CH

2.8.1 Computation of the Azimuth, Elevation, and Slant Range Factors

$$\theta_A = 0.125 \cdot \theta + IRZ$$

$$\phi_E = 0.125 \cdot \phi + IRZ$$

$$R^2 = 8.0 \cdot R + IRZ$$

where θ_A = azimuth factor
 ϕ_E = elevation factor
 R^2 = range factor
 θ = azimuth angle (degrees)
 ϕ = elevation angle (degrees)
 R = range (meters)
 IRZ = timing factor

2.8.2 Computation of Azimuth Angle, Elevation Angle, and Slant Range of the Data Point

$$\theta = 180 - \theta_A$$

ROCK 3

$$\phi = 180 - \phi_E$$

$$R = 1.953125 \cdot R^2$$

where θ = azimuth angle (degrees)

ϕ = elevation angle (degrees)

R = slant range (meters)

ϕ_E = elevation factor

θ_A = azimuth factor

R^2 = range factor

2.9 Subroutine TMPMERG

2.9.1 Computation of Temperature (Steinhart Equation)

$$T = 1/[A + (B \cdot LR) + (C \cdot LR^3)]$$

where T = temperature in degrees Kelvin

LR = log of the thermister resistance value

$\left. \begin{array}{l} A = \\ B = \\ C = \end{array} \right\}$ calibration constants supplied by
the instrument manufacturer

2.9.2 Computation of Temperature (Layton-Clark Equation)

$$T = B/(LR - A) - C$$

where T = temperature in degrees Kelvin

LR = log of the thermister resistance value

$\left. \begin{array}{l} A = \\ B = \\ C = \end{array} \right\}$ calibration constants supplied by
the instrument manufacturer

2.10 Subroutine INTPTMP

2.10.1 Computation of Interpolation Ratio

$$K = (G_2 - G)/(G_2 - G_1)$$

where K = interpolation ratio

G_2 = time of upper bounding level

ROCK 3

G_1 = time of lower bounding level

G = time of interpolated level

2.10.2 Interpolation for Missing Temperatures

$$T = T_2 - K \cdot (T_2 - T_1)$$

where T = interpolated temperature (degrees K)

T_2 = temperature, upper bounding level (degrees K)

T_1 = temperature, lower bounding level (degrees K)

K = interpolation ratio

2.11 Subroutine MIDINT

2.11.1 Computation of the Midinterval VX and VY

$$VX = (X - XA) / (GA - G)$$

$$VY = (Y - YA) / (GA - G)$$

where VX = midinterval east-west velocity component

VY = midinterval north-south velocity component

XA = upper bounding level east-west position component

X = lower bounding level east-west position component

YA = upper bounding level north-south position component

Y = lower bounding level north-south position component

GA = time after launch to upper bounding level (seconds)

G = time after launch to lower bounding level (seconds)

2.11.2 Computation of Fall Rate

$$VZ = (ZA - Z) / (GA - G)$$

where VZ = fall rate (km/seconds)

ZA = altitude, upper bounding level (km)

Z = altitude, lower bounding level (km)

GA = time after launch to upper bounding level (seconds)

G = time after launch to lower bounding level (seconds)

2.11.3 Computation of Mean Temperature, Mean Height, and Mean Time

$$TP = (T + TA) / 2$$

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$$H = (Z + ZA)/2$$

$$GG = (G + GA)/2$$

where TP = mean temperature

TA = temperature, upper bounding level (degrees K)

T = temperature, lower bounding level (degrees K)

H = mean height

ZA = height, upper bounding level (km)

Z = height, lower bounding level (km)

GG = mean time (seconds)

GA = time, upper bounding level (seconds)

G = time, lower bounding level (seconds)

2.12 Subroutine BANDTC

2.12.1 Computation of a Delta Time

$$\Delta G = G_3 - G_1$$

where ΔG = delta time

G_3 = time of upper bounding level

G_1 = time of lower bounding level

2.12.2 Computation of Local Acceleration of Gravity

$$GL = GRAT \cdot 9.80616$$

where GL = local acceleration of gravity

GRAT = ratio of local gravity to gravity at 45 degrees latitude

9.80616 = acceleration of gravity at 45 degrees latitude

2.12.3 Computation of Ballistic Motion Corrections (reference 2, Bibliography)

2.12.3.1 Correction of East-West and North-South Velocity Components

$$VX = VX_2 - \frac{VX_2 \cdot [(VX_3 - VX_1)/\Delta G]}{[(VZ_3 - VZ_1)/\Delta G] + GL}$$

$$VY = VY_2 - \frac{VY_2 \cdot [(VY_3 - VY_1)/\Delta G]}{[(VZ_3 - VZ_1)/\Delta G] + GL}$$

ROCK 3

where

- VX = corrected east-west velocity component
- VY = corrected north-south velocity component
- VX_1 = lower level east-west velocity component
- VX_2 = intermediate level east-west velocity component
- VX_3 = upper level east-west velocity component
- VY_1 = lower level north-south velocity component
- VY_2 = intermediate level north-south velocity component
- VY_3 = upper level north-south velocity component
- VZ_1 = fall rate, lower level
- VZ_3 = fall rate, upper level
- ΔG = delta time
- GL = local acceleration of gravity

2.12.3.2 Computation of Ventilation Velocity

$$V = [VZ_2^2 + (VX - VX_2)^2 + (VY - VY_2)^2]^{1/2}$$

where

- V = ventilation velocity
- VZ_2 = intermediate level vertical velocity
- VX = corrected east-west velocity component
- VX_2 = intermediate level east-west velocity component
- VY = corrected north-south velocity component
- VY_2 = intermediate level north-south velocity component

2.12.3.3 Computation of Aerodynamic Heating Correction

$$AA = K1_Z \cdot V^2$$

where

- AA = aerodynamic heating correction
- $K1_Z$ = aerodynamic heating term vs altitude (see attachment 8, table 1)
- Z = index into $K1$ table (20—70 km)
- V = ventilation velocity

2.12.3.4 Computation of Time Lag Correction

$$AB = K2_Z \cdot (T_3 - T_1) / \Delta G$$

where AB = time lag correction

$K2_Z$ = time lag term vs altitude (see attachment 8, table 1)

T_3 = temperature of upper level (degrees K)

T_1 = temperature of lower level (degrees K)

ΔG = delta time

Z = index into the K2 table

2.12.3.5 Computation of Radiation Heat Loss Correction

$$AD = K3_Z \cdot T^4$$

where AD = radiation heat loss correction

$K3_Z$ = radiation heat loss term vs altitude (see attachment 8, table 1)

Z = index into the K3 table

T = temperature of the thermistor (degrees K)

2.12.3.6 Computation of Radiation and Electrical Correction

$$AC = K4_Z$$

$$AC = K5_Z \text{ if at night}$$

where AC = radiation and electrical correction

$K4_Z$ = radiation and electrical loss term, day

$K5_Z$ = radiation and electrical loss term, night

Z = index into the K4 and K5 tables

2.12.3.7 Computation of Corrected Temperature

$$TC = T - AA + AB - AC + AD$$

where TC = corrected temperature

T = temperature of the thermistor

AA = aerodynamic heating correction

AB = time lag correction

ROCK 3

AC = radiation and electrical correction

AD = radiation heat loss correction

2.13 Subroutine COMPRSR

2.13.1 Computation of Interpolating Ratio

$$K = (ZA - Zb)/(ZA - ZB)$$

where K = interpolating ratio

ZA = upper level height

ZB = lower level height

Zb = baseline height

2.13.2 Computation of Baseline Temperature

$$Tb = TA - [K \cdot (TA - TB)] - 273.15$$

where Tb = baseline temperature (degrees C)

TA = upper level temperature (degrees K)

TB = lower level temperature (degrees K)

K = interpolation ratio

2.13.3 Computation of Temperature Difference

$$DIFF = Tb - TMP$$

where DIFF = temperature difference (degrees C)

Tb = baseline temperature (degrees C)

TMP = co-rawinsonde temperature for the level (degrees C)

2.14 Subroutine TWOKM

None

2.15 Subroutine PRESCOM

2.15.1 Computation of Geopotential Height

$$H = GRAT \cdot [(RE \cdot Z)/(RE + Z)]$$

where H = geopotential height

GRAT = gravitational ratio, local gravity to gravity at 45 degrees latitude

ROCK 3

RE = radius of the Earth

Z = geometric height

2.15.2 Computation of Mean Virtual Temperature

$$\overline{TV} = (TV + TVP)/2$$

where \overline{TV} = mean virtual temperature

TV = virtual temperature of the level

TVP = virtual temperature of the previous level

2.15.3 Computation of Log of Pressure

$$PL = PPL - (H - HP)/(PC \cdot \overline{TV})$$

where PL = log of pressure of the level

PPL = log of the baseline pressure

PC = 67.442 = metric constant

\overline{TV} = mean virtual temperature of the layer

H = geopotential height of the level

HP = geopotential height of the previous level

2.16 Subroutine ONEKILO

2.16.1 Computation of Next Output Level

$$Hs = [(IH/1000) \cdot 1000] + HINT$$

where Hs = desired output level

IH = height converted to integer

HINT = output interval requested

2.16.2 Computation of Interpolation Ratio

$$K = (Hs - HB)/(HA - HB)$$

where K = interpolation ratio

Hs = output level

HA = height of upper bounding level

HB = height of lower bounding level

2.16.3 Interpolation of Position Components, Temperature, Uncorrected Temperature, Fall Rate, and Log of Pressure

$$X_s = K \cdot (X_A - X_B) + X_B$$

where X_s = interpolated value

K = interpolation ratio

X_A = upper level value

X_B = lower level value

2.17 Subroutine PLOTCH

None

2.18 Subroutine PUTOUT

None

2.19 Subroutine ETFORM

2.19.1 Computation of Interpolation Ratio for Significant Data

$$K = (H_s - H_B) / (H_A - H_B)$$

where K = interpolation ratio

H_s = output level

H_A = height of upper bounding level

H_B = height of lower bounding level

2.19.2 Computation of Interpolation Ratio for Mandatory Data

$$K = (P_L - P_B) / (P_A - P_B)$$

where K = interpolation ratio

P_L = log of pressure at output level

P_A = log of pressure, upper bounding level

P_B = log of pressure, lower bounding level

2.19.3 Interpolation for Output Data

$$X_s = K \cdot (X_A - X_B) + X_B$$

where X_s = interpolated value

ROCK 3

K = interpolation ratio

XA = upper level value

XB = lower level value

2.20 Subroutine CODIT

2.20.1 Computation of Velocity of Sound

$$V_s = 331.45 \cdot (T/273.15)^{1/2}$$

where V_s = velocity of sound (meters/second)

T = temperature (degrees K)

2.20.2 Computation of Pressure

$$P = 10^{PL}$$

where P = barometric pressure (millibars)

PL = log of pressure

2.20.3 Computation of Density

$$\rho = (P/T) \cdot 348.38$$

where ρ = density (grams/cubic meter)

P = pressure (millibars)

T = temperature (degrees K)

2.21 Subroutine RDRAWIN

None

2.22 Subroutine INT

2.22.1 Interpolation for Output Data

$$K = (H_s - H_B)/(H_A - H_B)$$

where K = interpolation ratio

H_s = output level

H_A = height of upper bounding level

H_B = height of lower bounding level

ROCK 3

$$X_s = K \cdot (X_A - X_B) + X_B$$

where

X_s = interpolated value

K = interpolation ratio

X_A = upper level value

X_B = lower level value

2.23 Subroutine ROCOB

None

2.24 Subroutine MANDL

None

3.0 INPUT

Input to the rocket program is divided into four groups: temperature data, tracking data, co-ravinsonde data, and control data from the terminal.

3.1 Tracking Data

The program reads two basic formats of input data: the 46-character radar data and the TAER format. The other input formats are converted by editor programs to the TAER format.

3.1.1 Radar Tracking Data, 46-character

The 46-character data is from the tracking radar and is put into a file in the following format (see attachment 6):

791121412480201425025546000013634434622462

See attachment 8 for a breakdown of this data.

3.1.2 TAER Format and MATTY File

The TAER format and MATTY file are identical except for the first line of the MATTY file (see attachment 5).

GGGGG.G AAA.AAA EE.EEE RRRRR.R

GGGGG.G = time of data (seconds after midnight)

AAA.AAA = azimuth angle (degrees from true north)

EE.EEE = elevation angle (degrees from horizontal)

RRRRR.R slant range (yards)

3.2 Temperature Data

Temperature data is in three types of record groups collected by one of two types of tracking systems. The tracking systems are the AN/GMD-4 and the MSS system. The three types of records follow.

3.2.1 Ordinate Ratios (Attachment 2)

Record	Contents
1	Test number (5 digits)
2	Station number (2 digits) Month (2 digits) Day (2 digits) Year (2 digits) Time of launch, GMT (4 digits) Type of instrument (3 digits) Plain language name of motor Type RAEMG group (see attachment 1, tables 1 through 5) (6 digits)
3	Temperature equation constants Three 8-character numbers
4—24	Temperature sensor calibration data Two 8-character numbers each
25	Separator flag
26—end	Ordinate ratio (3 digits) referenced to 95 followed by time in seconds after launch (4 digits)

3.2.2 Coded Temperatures (Attachment 3)

Record	Contents
1	Test number (5 digits)
2	Station number (2 digits) Month (2 digits) Day (2 digits) Year (2 digits) Time of launch, GMT (4 digits) Type of instrument (3 digits) Plain language name of motor Type RAEMG group (see attachment 1, tables 1 through 5) (6 digits)
3—end	Coded temperatures (4 digits) followed by time in seconds after launch (4 digits). Temperature is coded by adding 50 to all negative temperatures and omitting the minus sign.

3.2.3 Missing Temperatures

Records 1 and 2 are the same as in the preceding paragraphs; in this case, they constitute the entire file.

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3.3 Co-Rawinsonde Data

The co-rawinsonde input data is the 250-meter output data from the rawinsonde program. Attachment 15 illustrates the format of this file. Its contents are as follows:

Altitude	Meters
Wind direction	Degrees
Windspeed	Meters/second
Temperature	Degrees Celsius
Dewpoint	Degrees Celsius
Pressure	Millibars
Relative humidity	Percent
Absolute humidity	Grams/cubic meter
Density	Grams/cubic meter
Refractive index	Microwave in N units, optical
Velocity of sound	Knots
Shear	Seconds ⁻¹
Vapor pressure	Millibars
Precipitable water	Millimeters

3.4 Control Data (Operator Dialogue)

A sample of the operator dialogue follows:

IS THIS A NIGHT RUN ? YES/NO
? NO
IS THIS A MATTY RUN ? YES/NO
? YES

4.0 OUTPUT

The primary output of the program is constant altitude data in kilometer intervals, 250-meter intervals, and 1,000-ft intervals. This information is output to the printer, disc file (or magnetic tape), and punch card file. The format for this data is the same to all three files as follows:

Height	Geometric feet or meters at standard intervals of 1 kilometer, 250 meters, and 1,000 ft
Wind direction	Degrees from true north. Missing data is shown as 999
Windspeed	Knots or meters/second. Calm is 000 and missing is 999
Temperature	Degrees Kelvin
Temperature correction	Degrees Kelvin
Atmospheric pressure	Millibars
Atmospheric density	Grams/cubic meter

ROCK 3

Fall Rate	Feet/second or meters/second (determined by height units)
Speed of Sound	Knots or meters/second (determined by height units)
Wind Shear	Seconds ⁻¹

Additionally, in the printer output, there are three quality control sets of data and a rocketsonde message code. The first quality control data set contains tracking information as follows:

Data point time	Seconds after midnight
Azimuth angle	Degrees from true north
Elevation angle	Degrees from horizontal
Range	Meters
Height	Meters
Data point time	Time of day — hours, minutes, and seconds
Time difference	Time difference between adjacent data points, seconds
Azimuth difference	Change in azimuth angle/minute, degrees
Elevation difference	Change in elevation angle/minute, degrees
Range difference	Change in range/minute, meters
Height difference	Change in height/minute, meters

The second quality control data set contains temperature information as follows:

Height	Meters
Temperature	Temperature of the rocketsonde instrument, degrees Celsius
Temperature	Temperature of the rawinsonde instrument, degrees Celsius
Temperature difference	Difference between above two temperatures at the height indicated

The third quality control data set is a graph of temperature in degrees Kelvin versus height in meters. The graph covers a range of 20,000 to 70,000 meters in height.

The teletype output is the rocketsonde coded message. Attachment 10 shows a sample copy of this output and attachment 11 gives a breakdown of the code.

The High Altitude Meteorological Data (HAMDATA) output is saved on disk for use as input to the HAMD program. A sample copy of this data is shown in attachment 14. The first section of this file consists of:

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Column

1—5	Altitude in geometric decameters
6—8	Wind direction with respect to true north, degrees
9—11	Windspeed in whole meters/second
12—15	Uncorrected y component, with a minus sign indicates northerly component, blank for southerly component
16—19	Uncorrected x component, with a minus sign indicates easterly component, blank for westerly component
20—23	Corrected y component, with a minus sign indicates a northerly component, blank for southerly component
24—27	Corrected x component, with a minus sign indicates an easterly component, blank for westerly component
28—30	Fall rate in whole meters/second
31—34	Temperature in whole degrees Celsius
35—37	Temperature correction, with a minus sign indicates negative temperature correction, blank indicates positive correction, whole degrees
38—44	Pressure in millibars to four significant digits with one digit to the left of the decimal point, three digits to the right of the decimal point, and a signed "exponent" to indicate the power of 10 by which the number is to be multiplied. Col. 38: first significant digit (never zero) Col. 39: decimal point Col. 40—42: three additional significant digits Col. 43: sign of exponent (never blank) Col. 44: power of 10 by which number is to be multiplied
45—51	Density in grams/cubic meter, same format as pressure
52—54	Speed of sound in whole meters/second

The second section of this file contains data as follows:

Height	Meters
Wind direction	Degrees from true north
Windspeed	Meters/second
Temperature	Degrees Celsius
Dewpoint	Degrees Celsius
Barometric pressure	Millibars
Refractive index	N units

5.0 ALGORITHMS

5.1 Subroutine MANDL

Convert mandatory level pressure to whole number for output in rocketsonde code using

$$IPS = (10^{PL(J)} + F1) (10^{JS}/10)$$

where IPS = pressure at mandatory level encoded as a whole number

PL(J) = log of the pressure at the mandatory level being converted to a whole number

F1 = round off factor used to move decimal point, this factor is based on PL(J)

If PL(J) < 0, F1 = 0.05
 < -1, F1 = 0.005
 < -2, F1 = 0.0005
 < -3, F1 = 0.00005
 < -4, F1 = 0.000005

JS = intermediate factor based on the pressure level indicator J which is set by the number of levels processed

If J ≥ 31, JS = 6
 < 31, JS = 5
 < 26, JS = 4
 < 21, JS = 3
 < 16, JS = 2
 < 10, JS = 1

5.2 Subroutine TWOKM

Set up values that are to be used when calling SIMQ by multiplying elements of the matrix and assigning to proper place in symmetric coefficient matrix (A).

$$AX_{(I, J)} = XA_{(I, J)} + XC_{(K, I)} \cdot SC_{(K, J)}$$

$$AY_{(I, J)} = YA_{(I, J)} + YC_{(K, I)} \cdot YC_{(K, J)}$$

Set up values that are to be used when calling SIMQ by multiplying elements of the matrix and assigning to proper place in constant vector matrix (B) using

$$BX_{(I)} = XB_I + XC_{(K, I)} \cdot X_K$$

$$BY_{(I)} = YB_I + YC_{(K, I)} \cdot Y_K$$

Using the coefficients returned from SIMQ, calculate a smoothed x and y from

$$SX = a^2 XB_3 + a XB_2 + XB_1$$

$$SY = a^2 YB_3 + a YB_2 + YB_1$$

ROCK 3

where

$$a = 5$$

XB = coefficients returned from SIMQ

SX = smoothed east-west component

SY = smoothed north-south component

5.4 Subroutine SIMQ

The least squares method provides a best fit of the components by generating a second degree polynomial equation, of general form:

$$y = k_2x^2 + k_1x + k_0$$

and computing an offset from the center of the 9-point range. Two matrices are created designated $[A]$ and $[B]$. Symmetric coefficient matrix (SCM) $[A]$ is in the form:

$$[A] = \begin{bmatrix} N & \sum X_i & \sum X_i^2 \\ \sum X_i & \sum X_i^2 & \sum X_i^3 \\ \sum X_i^2 & \sum X_i^3 & \sum X_i^4 \end{bmatrix}$$

and constant vector matrix (CVM) $[B]$ is in the form of:

$$[B] = \begin{bmatrix} \sum Y_i \\ \sum X_i Y_i \\ \sum X_i^2 Y_i \end{bmatrix}$$

Note: \sum indicates summation from 1 to N . $N=9$

Basic matrix equation $[A] [K] = [B]$ is solved by finding the inverse of $[A]$, $[A]^{-1}$ and performing multiplications:

$$[A]^{-1} [A] [K] = [A]^{-1} [B]$$

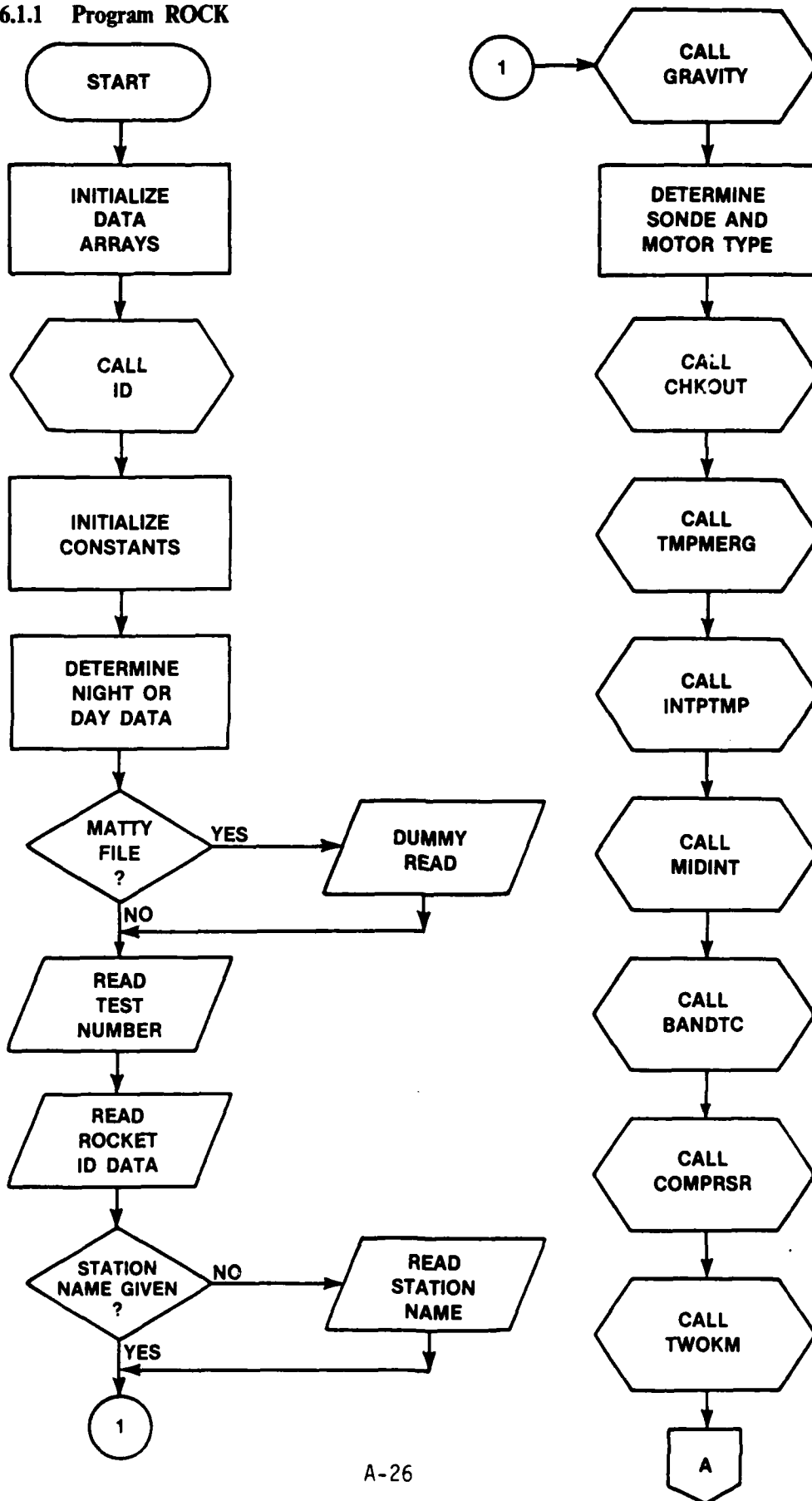
$$[I] [K] = [A]^{-1} [B]$$

$[A]^{-1}$ is calculated by SIMQ using the GAUSS-JORDAN inplace matrix inversion method. SIMQ returns the appropriate coefficients k_2 , k_1 , and k_0 , which the calling routine incorporates in calculating the appropriate values.

6.0 FLOWCHARTS

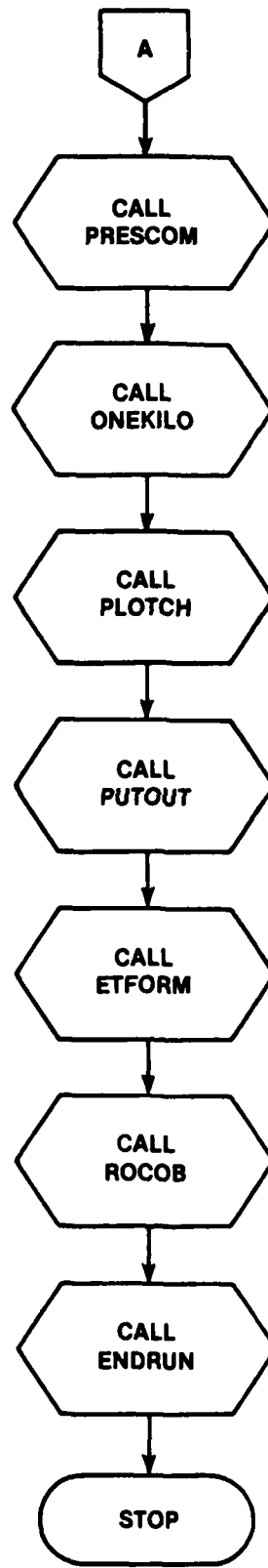
See the following pages.

6.1.1 Program ROCK

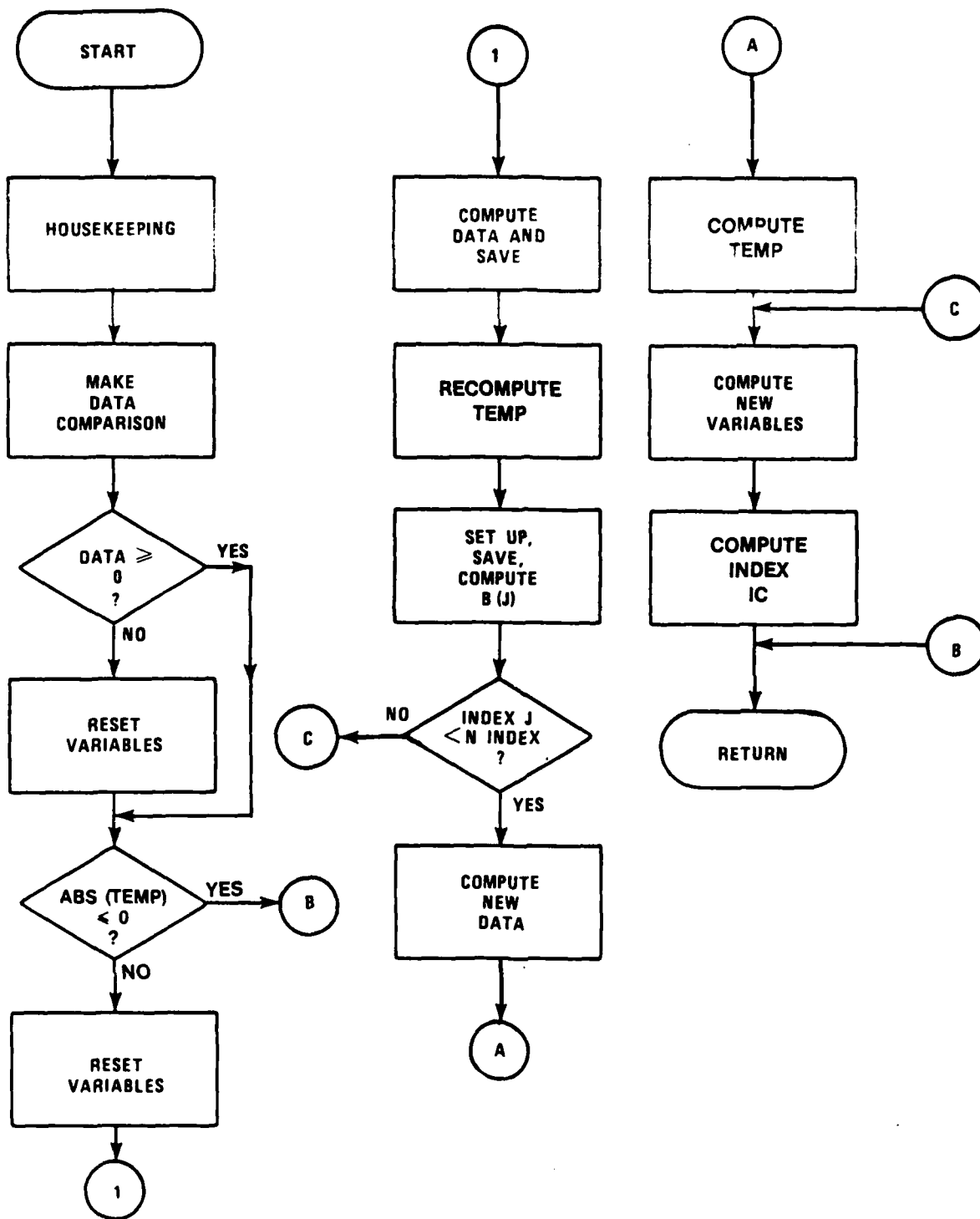


ROCK 3

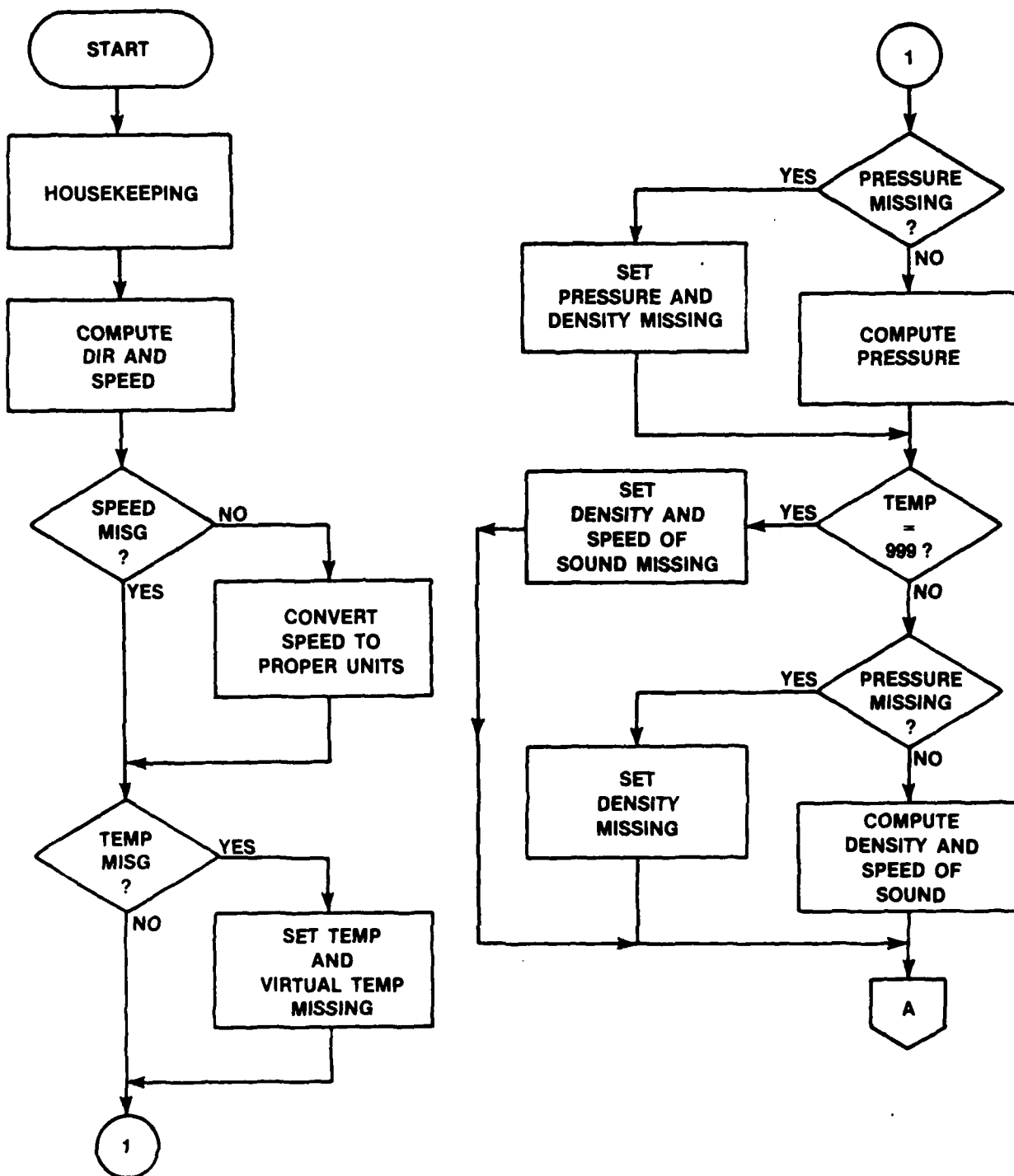
6.1.2 Program ROCK



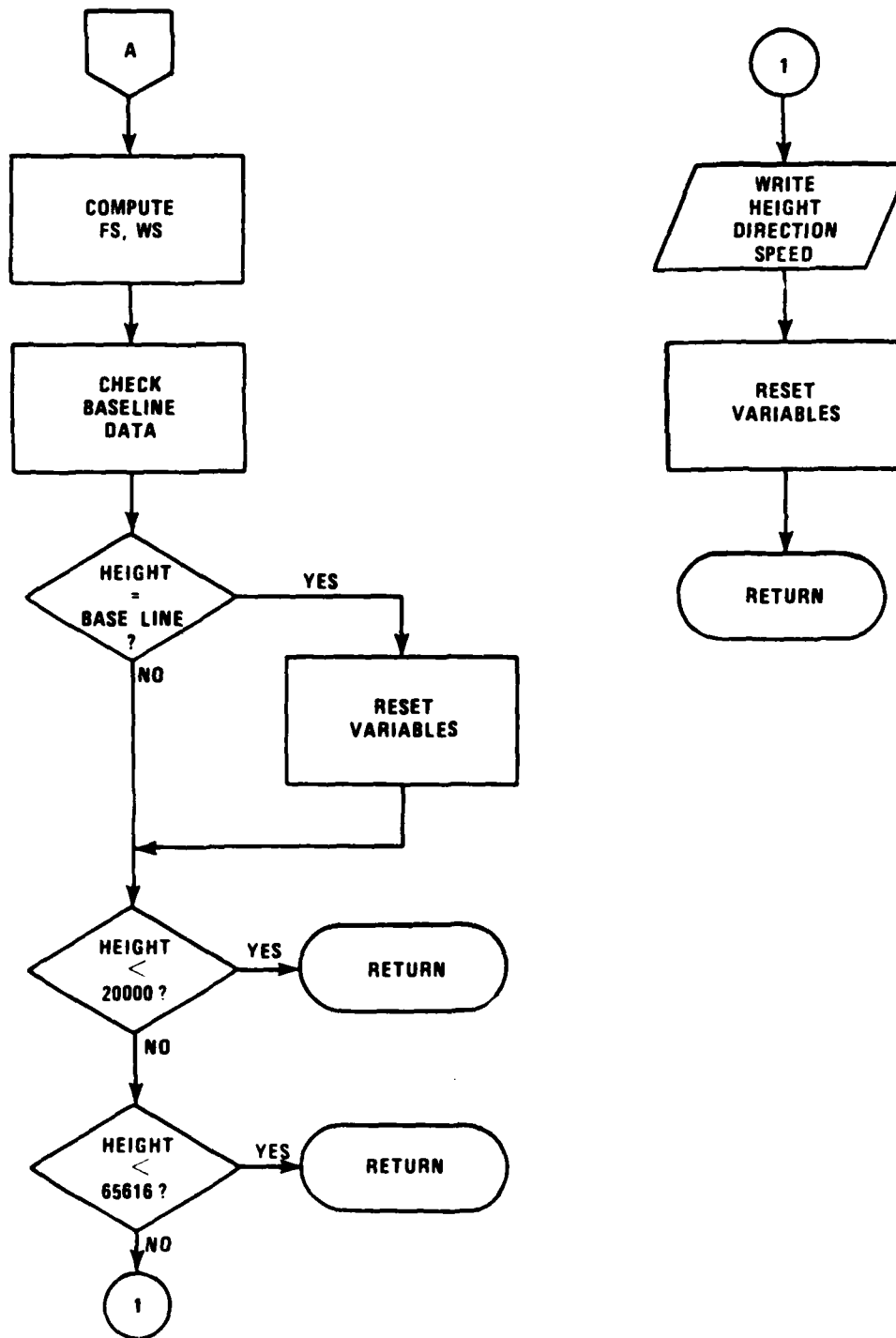
6.2 Subroutine SIMQ



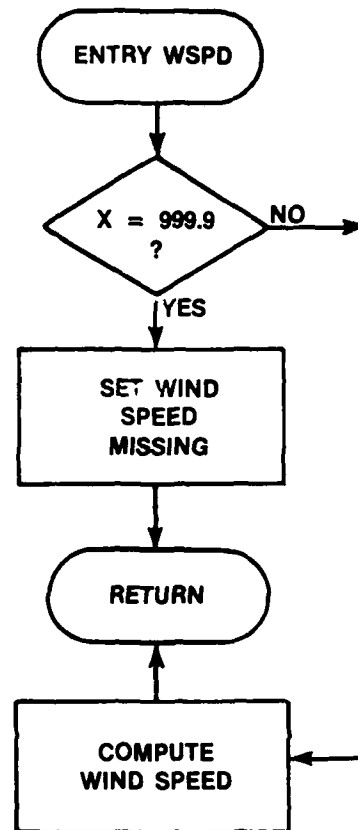
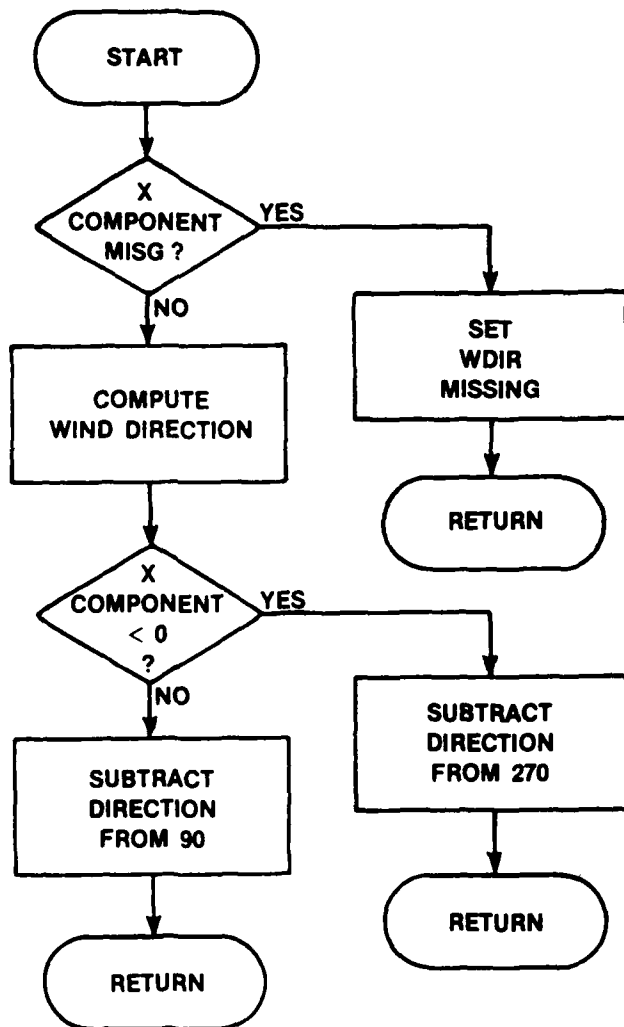
6.3.1 Subroutine OUTPUT



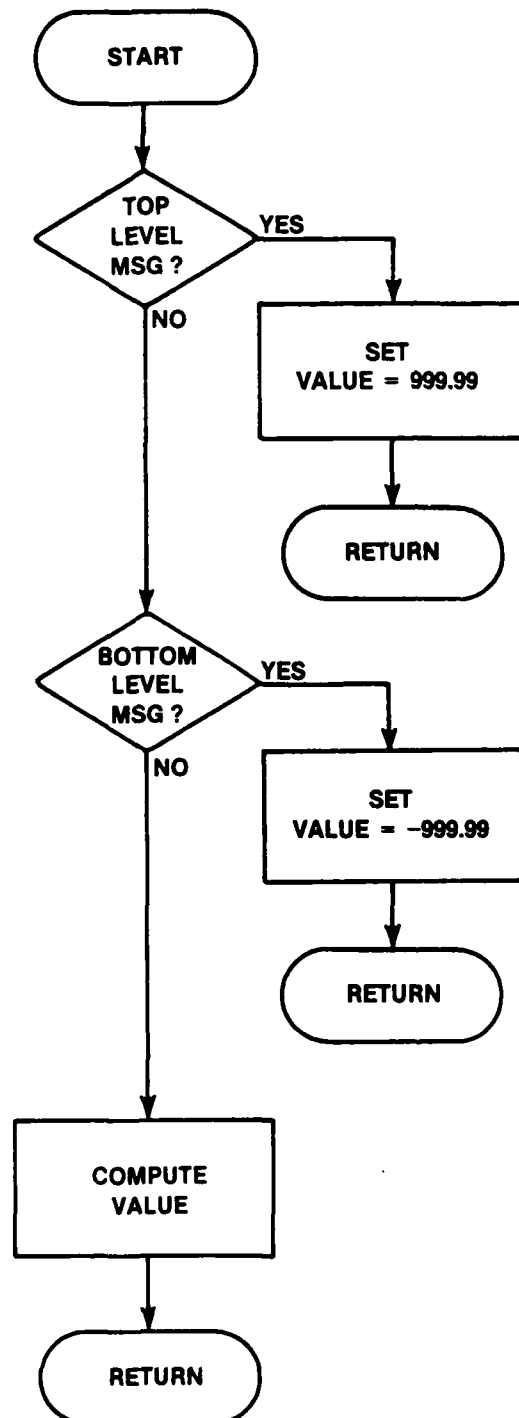
6.3.2 Subroutine OUTPUT



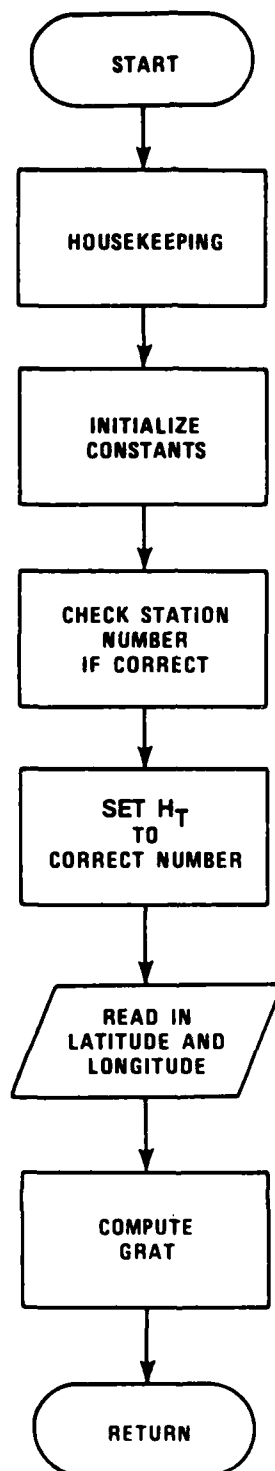
6.4 Function WDIR



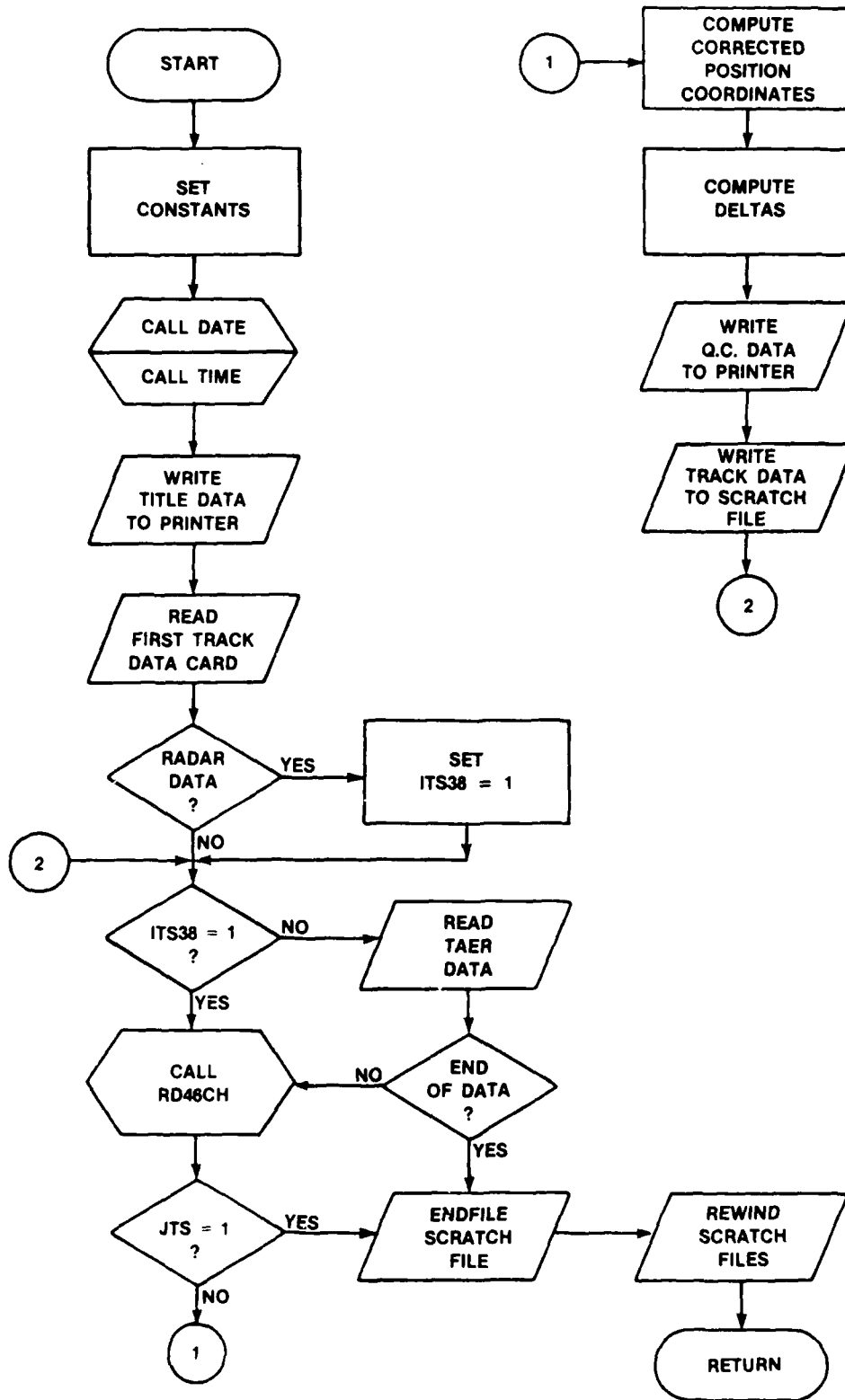
6.5 Function VALUE



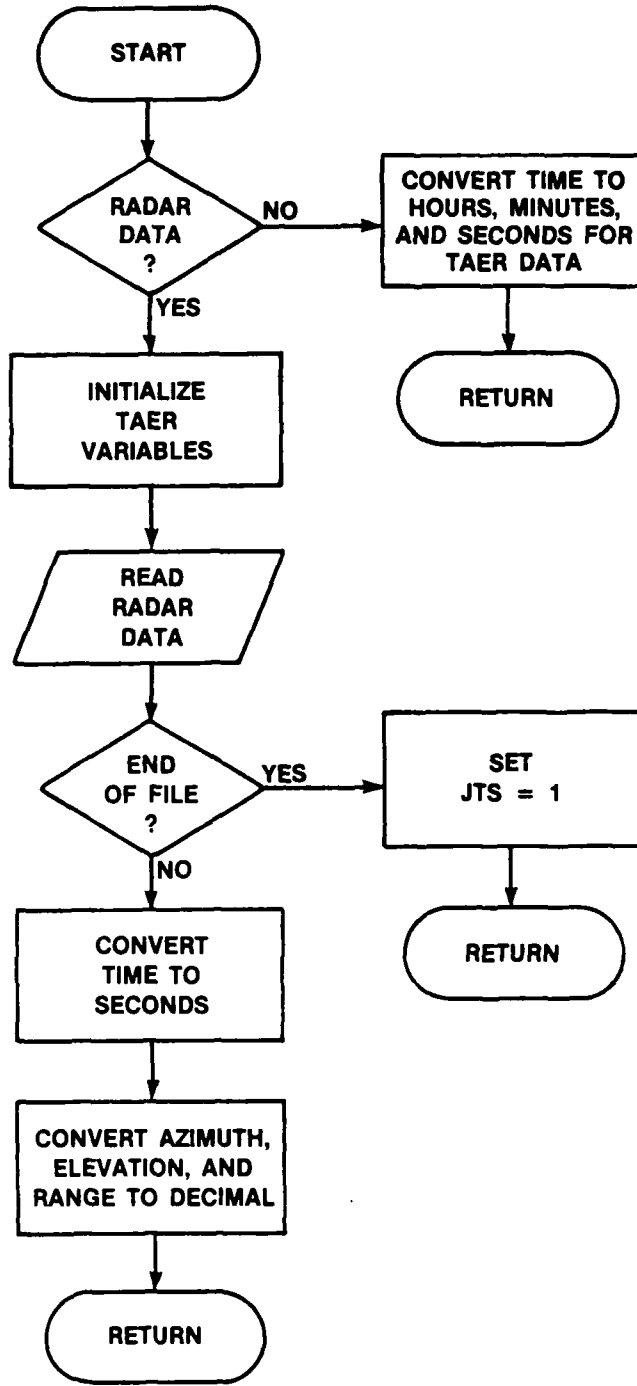
6.6 Subroutine GRAVITY



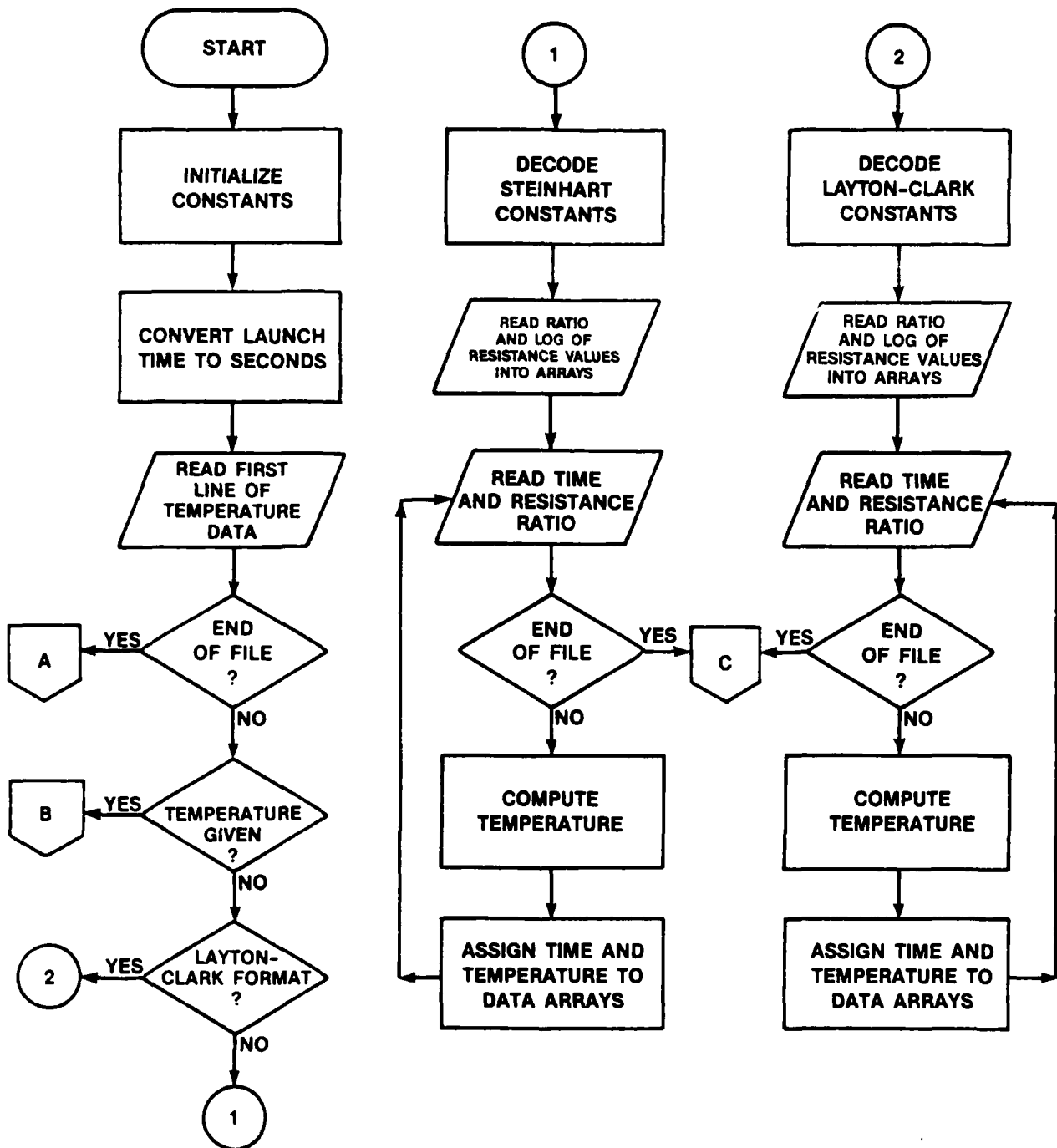
6.7 Subroutine CHKOUT



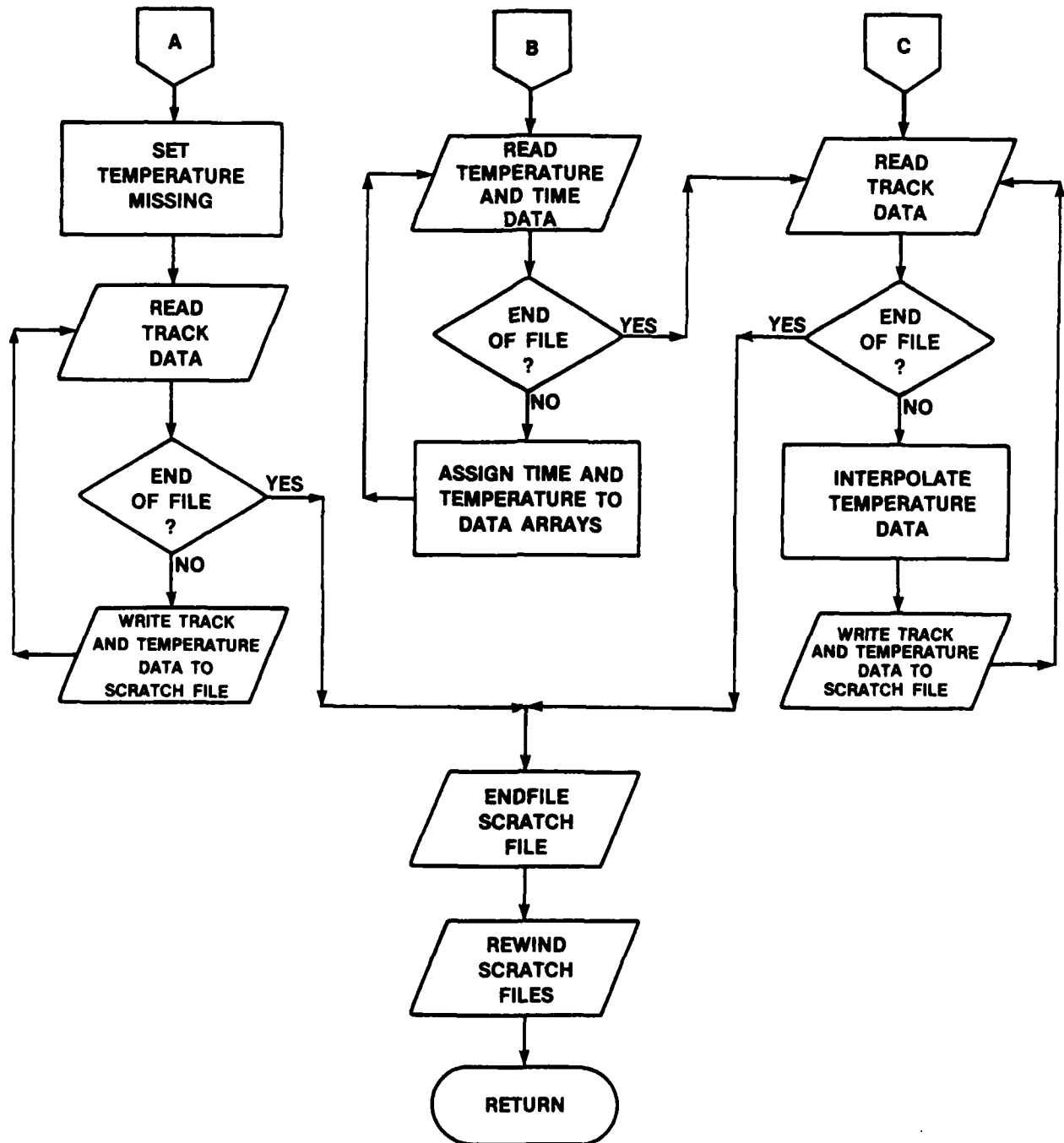
6.8 Subroutine RD46CH



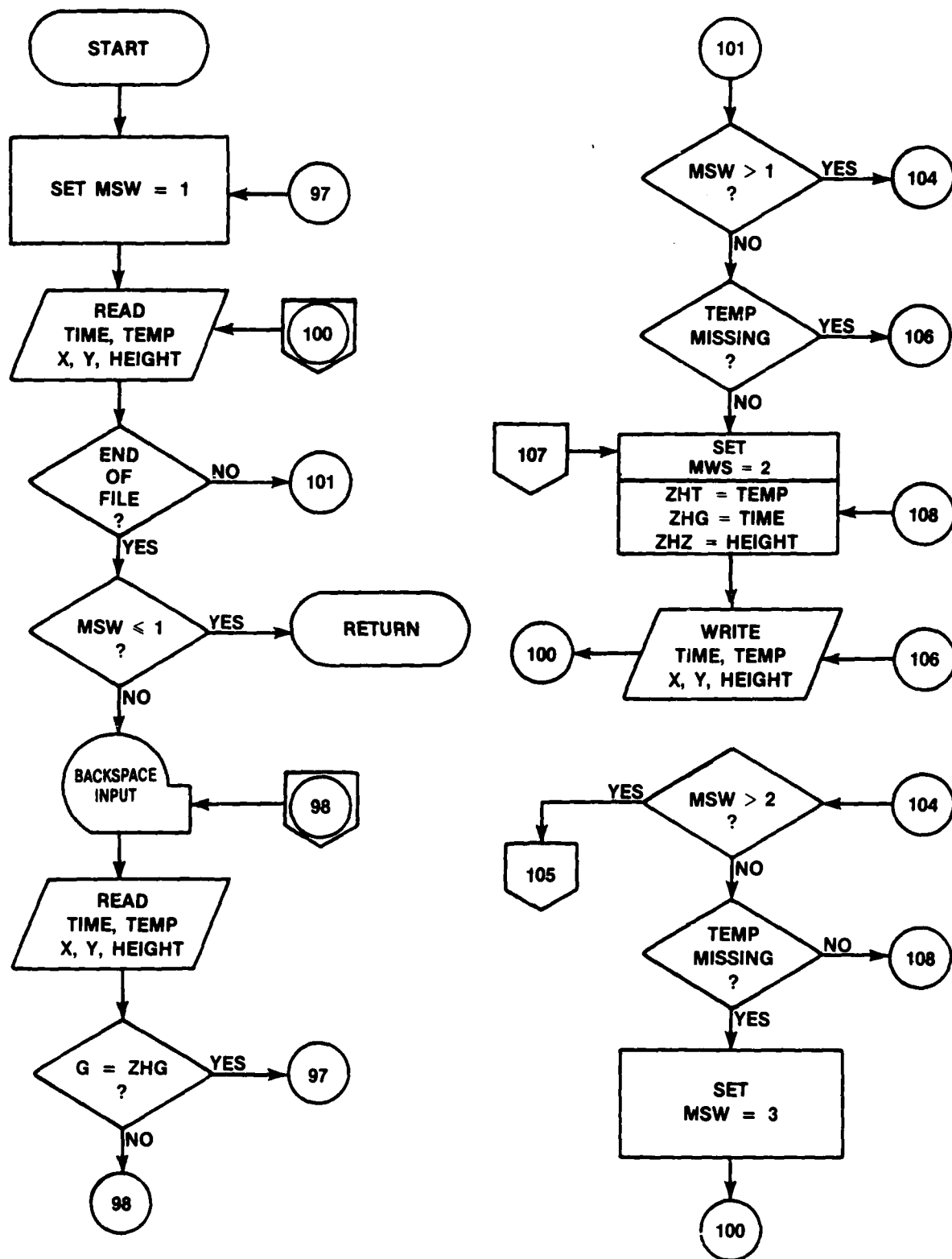
6.9.1 Subroutine TMPMERG



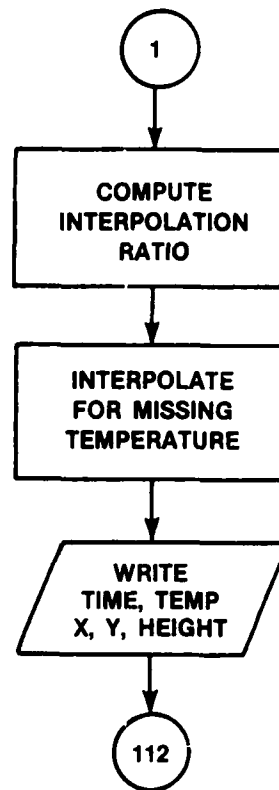
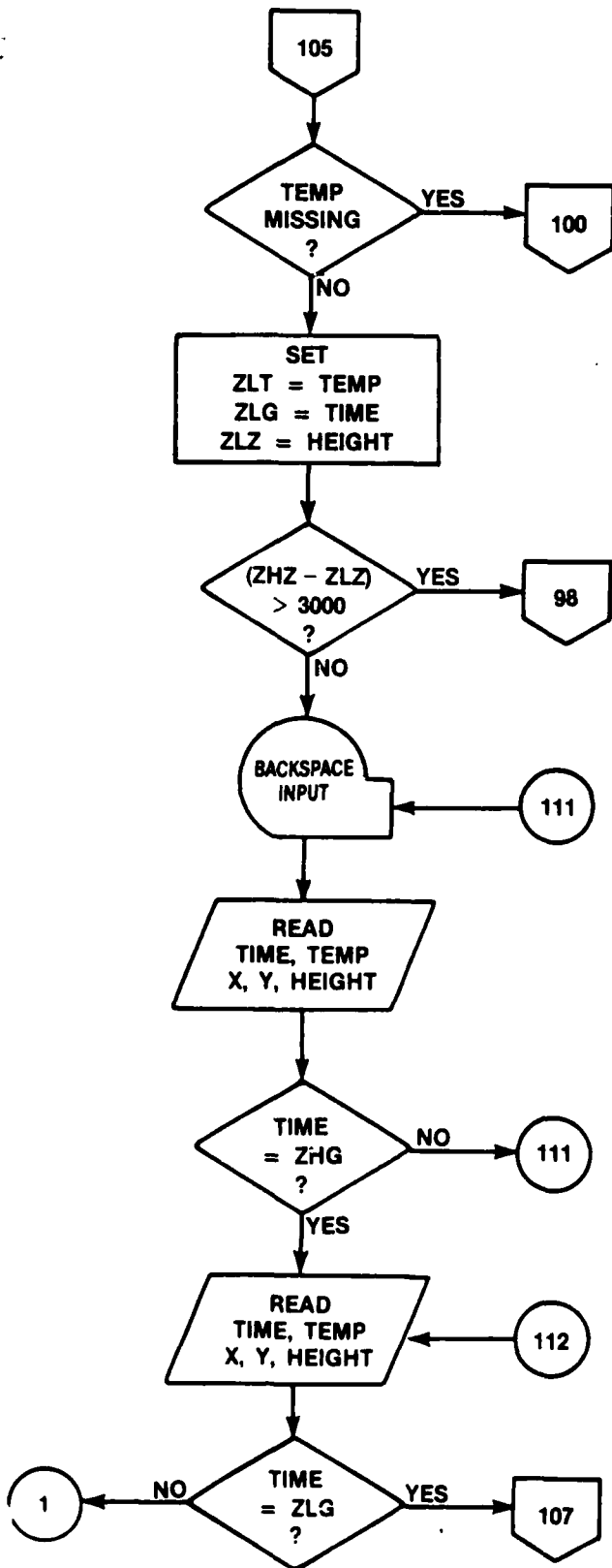
6.9.2 Subroutine TMPMERG



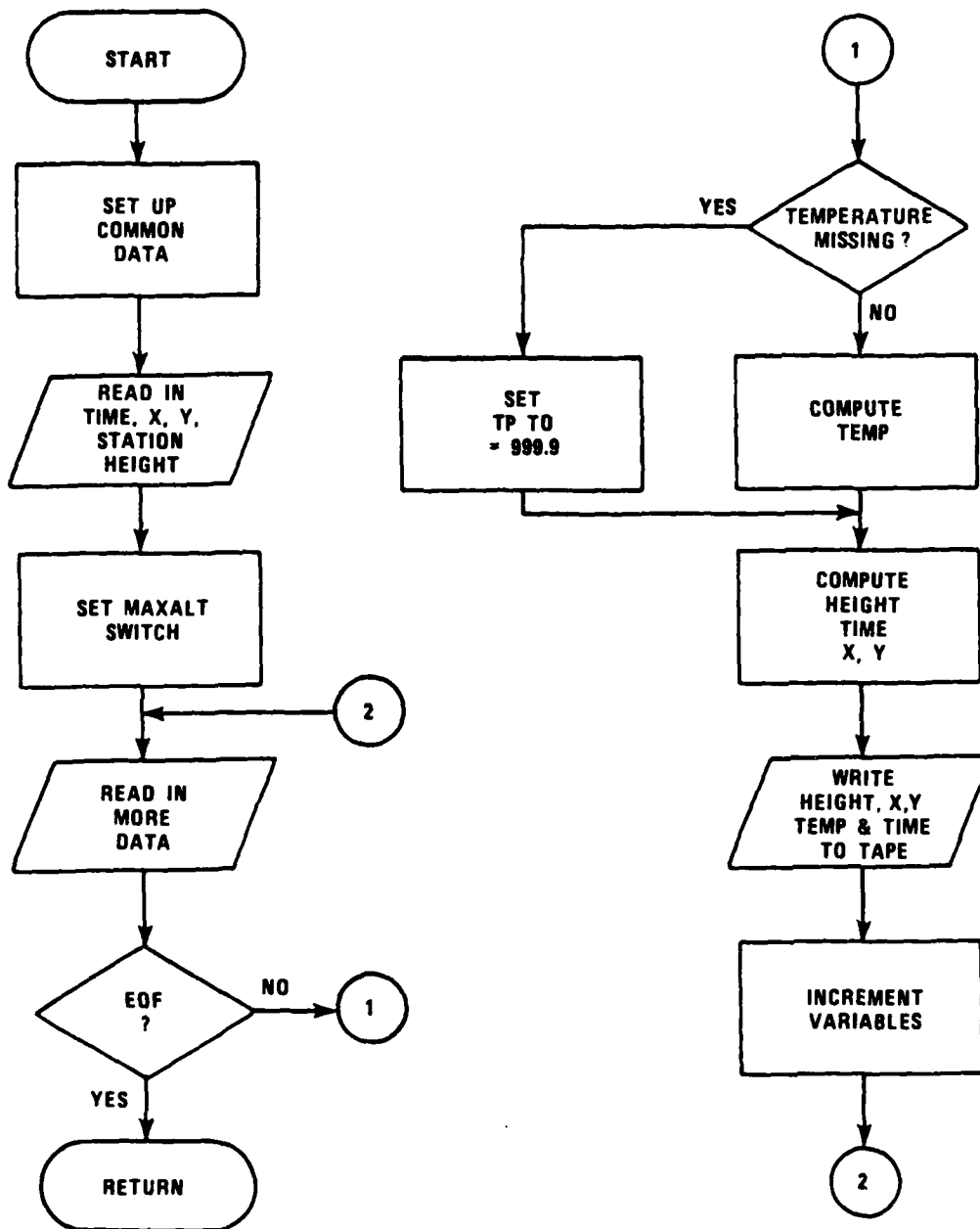
6.10.1 Subroutine INTPTMP



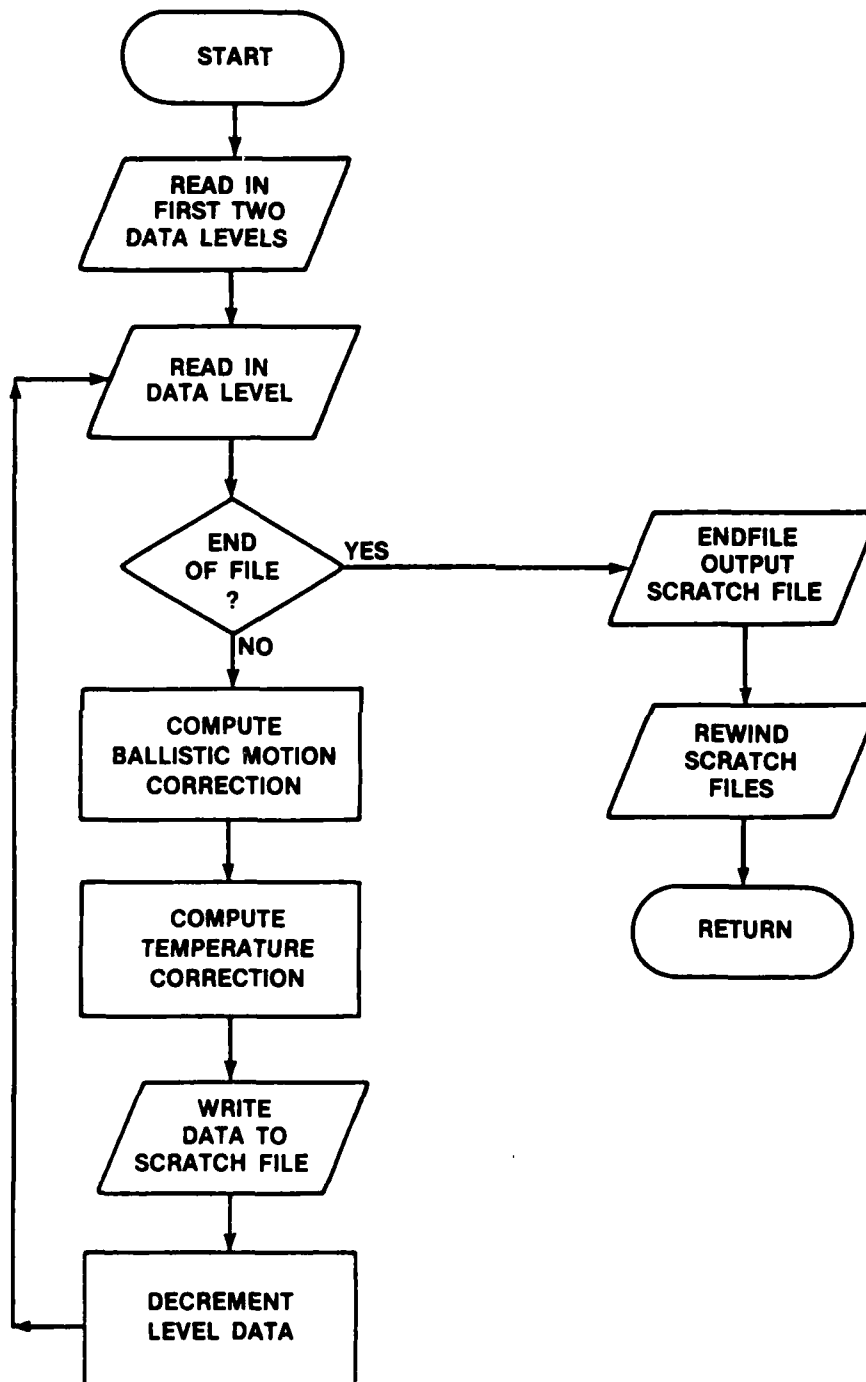
6.10.2 Subroutine INTPTMP



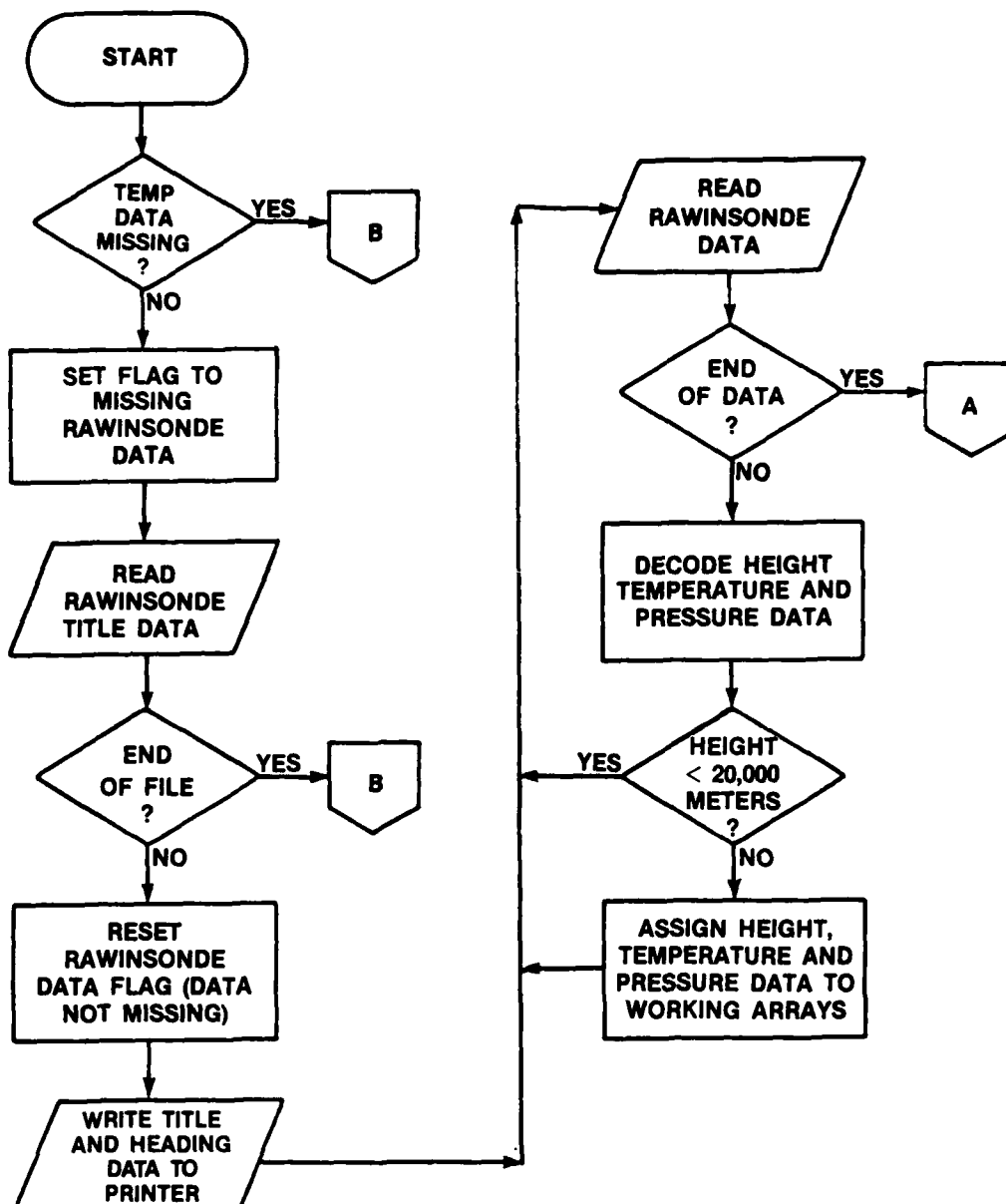
6.11 Subroutine MIDINT



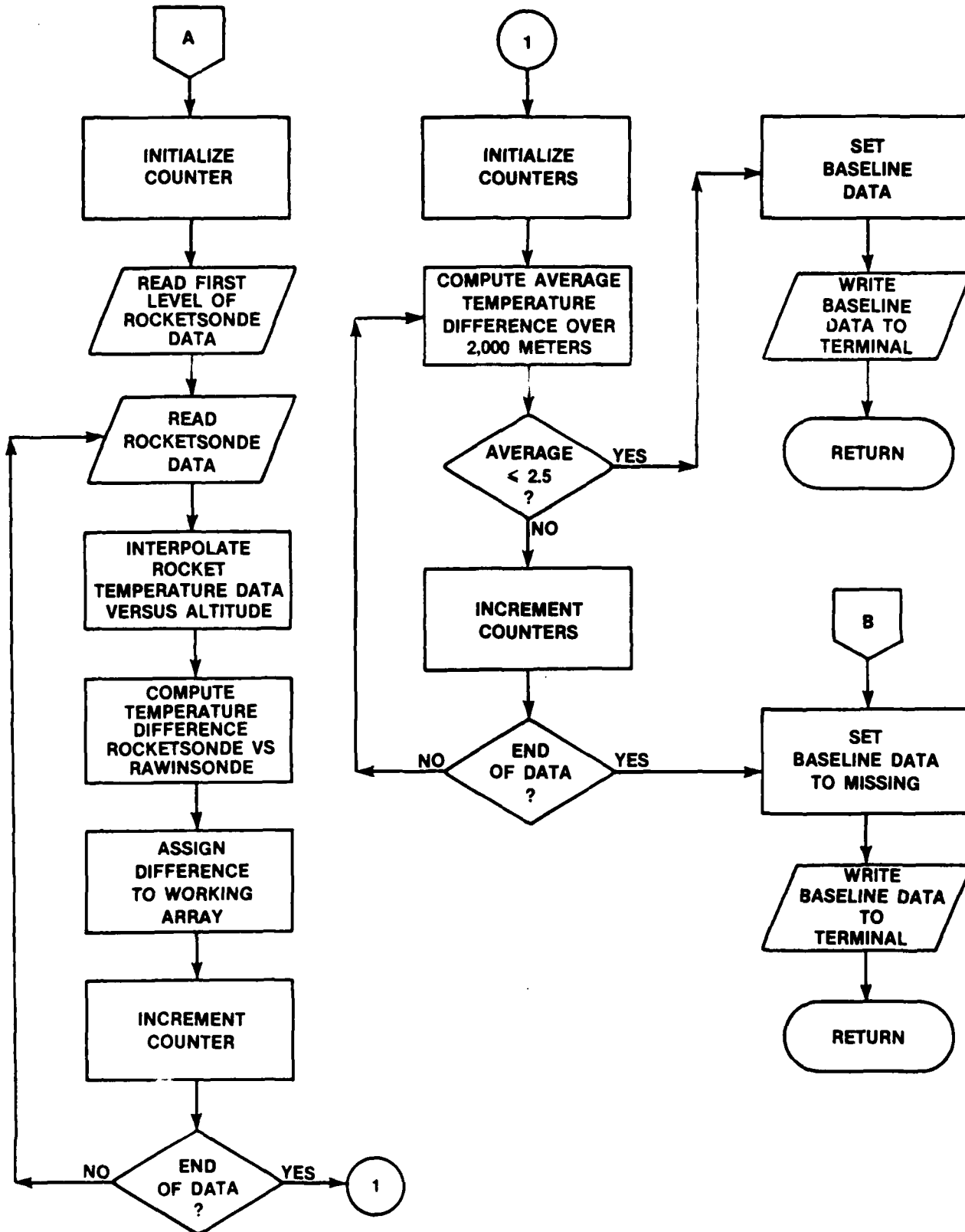
6.12 Subroutine BANDTC



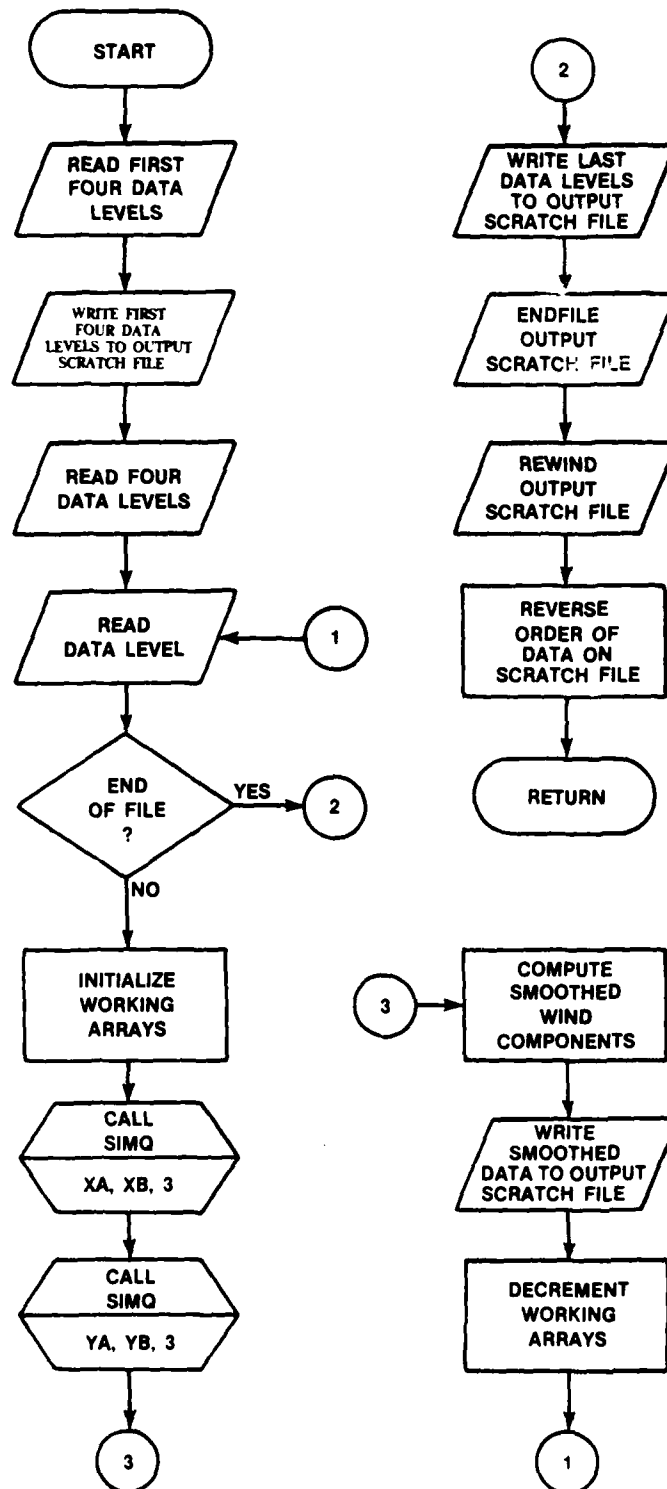
6.13.1 Subroutine COMPRSR



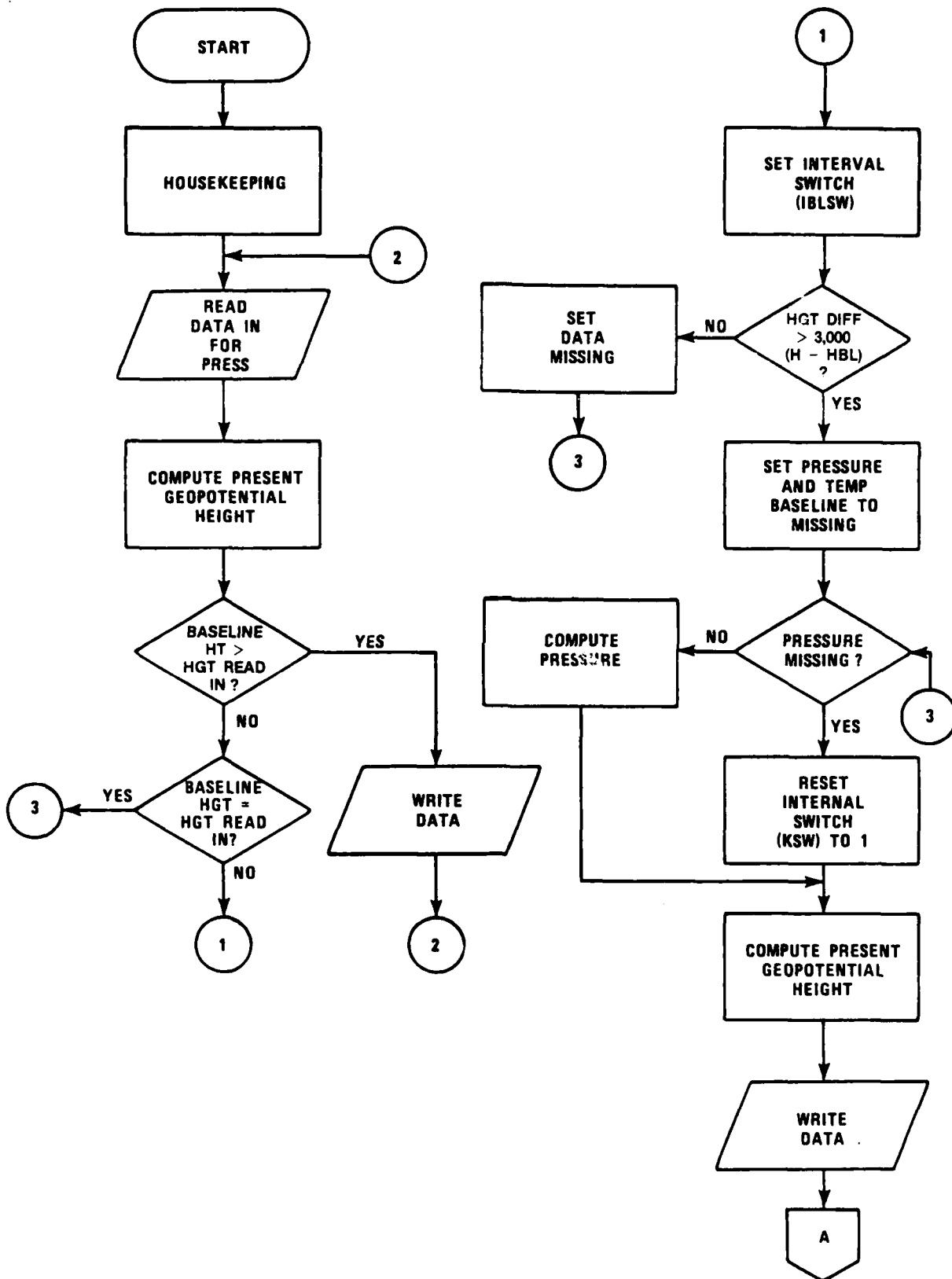
6.13.2 Subroutine COMPRSR



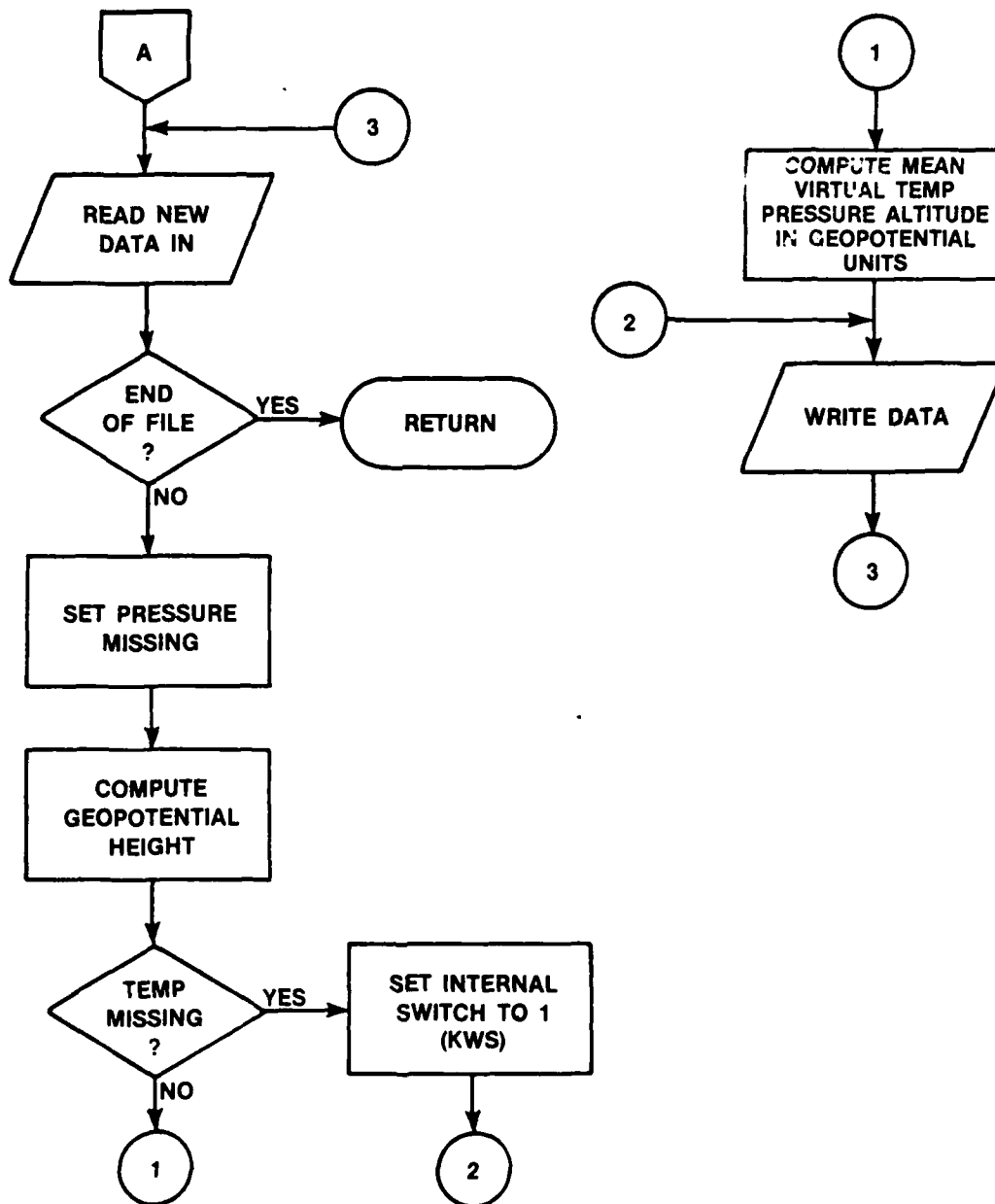
6.14 Subroutine TWOKM



6.15.1 Subroutine PRESCOM

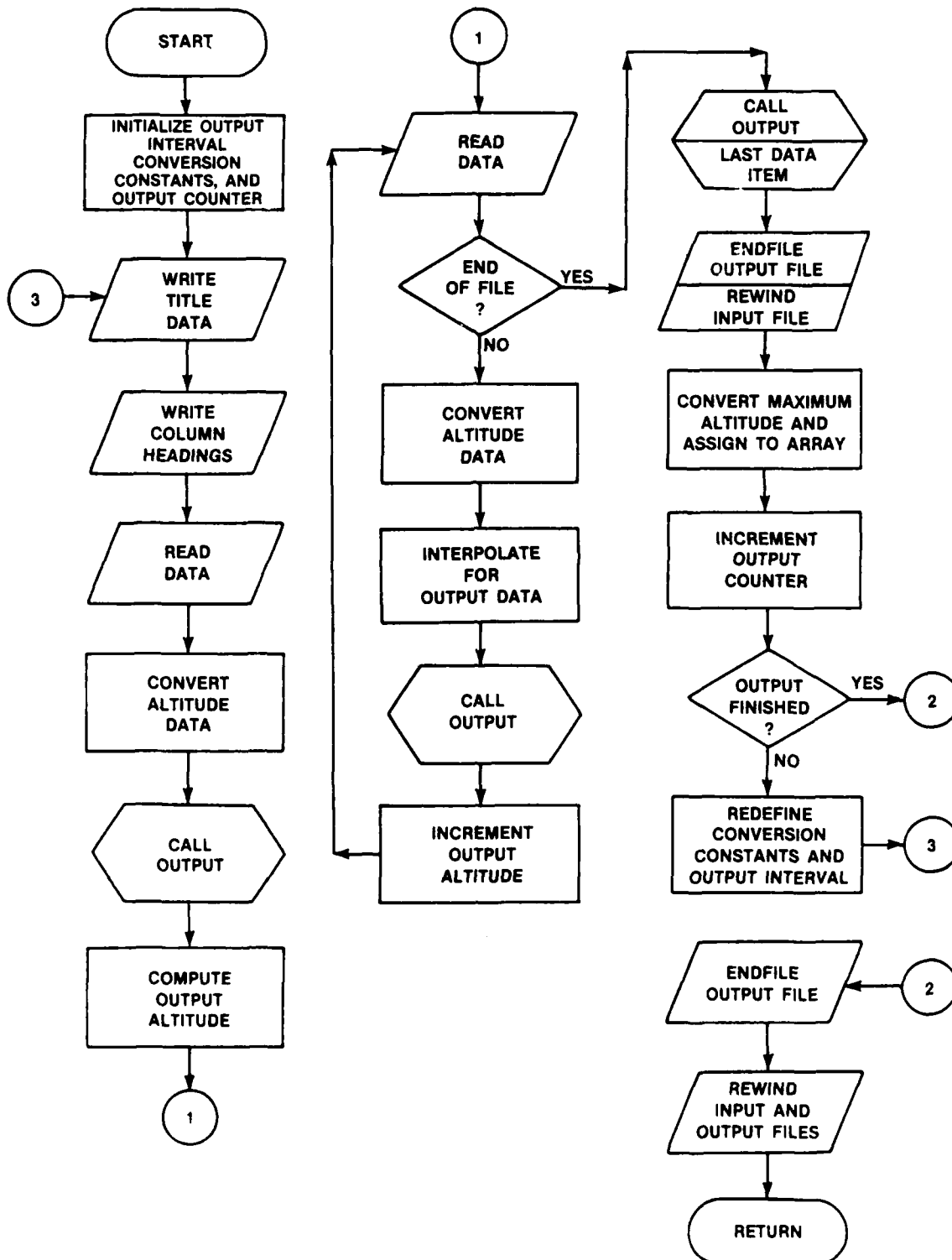


6.15.2 Subroutine PRESCOM

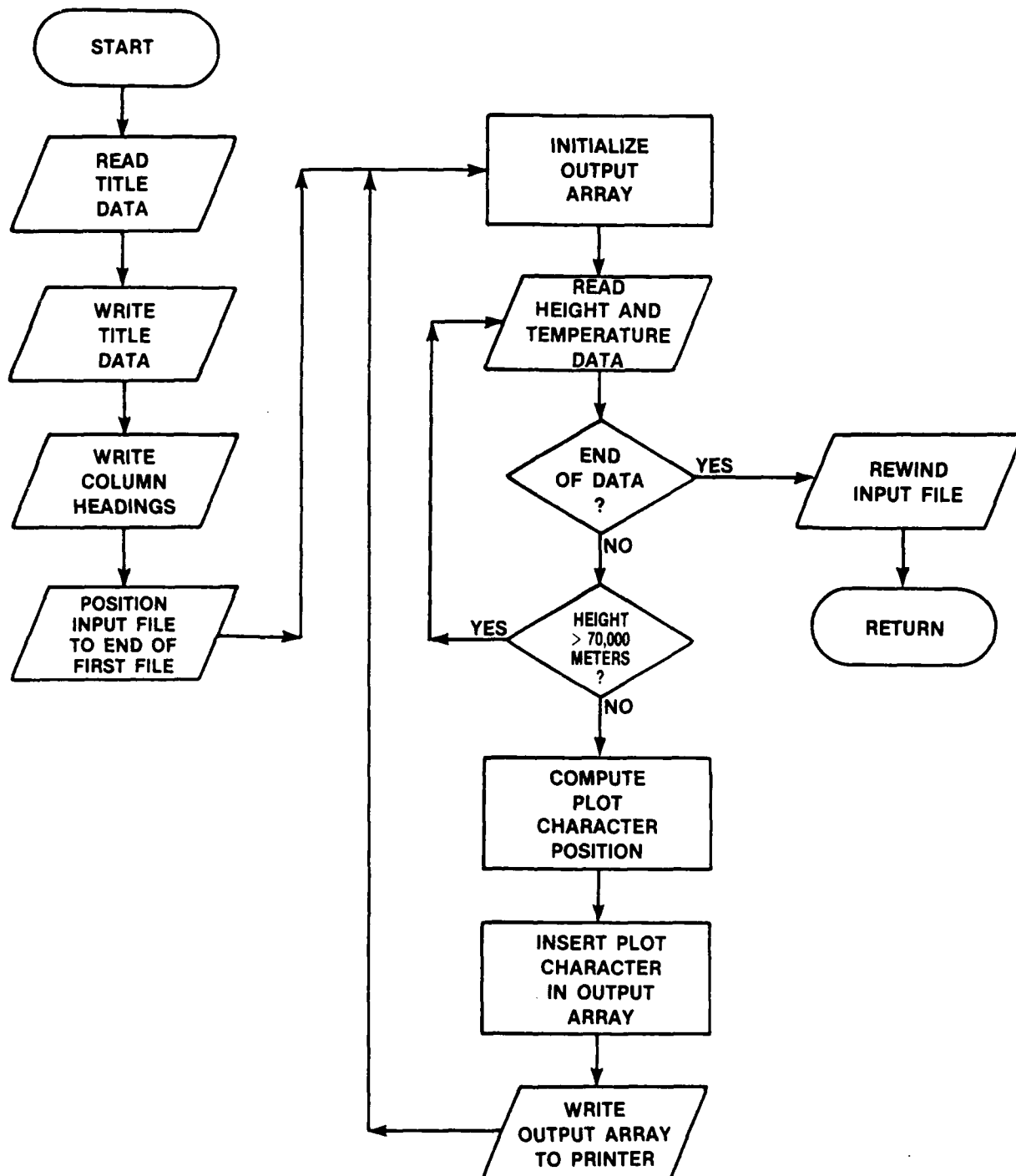


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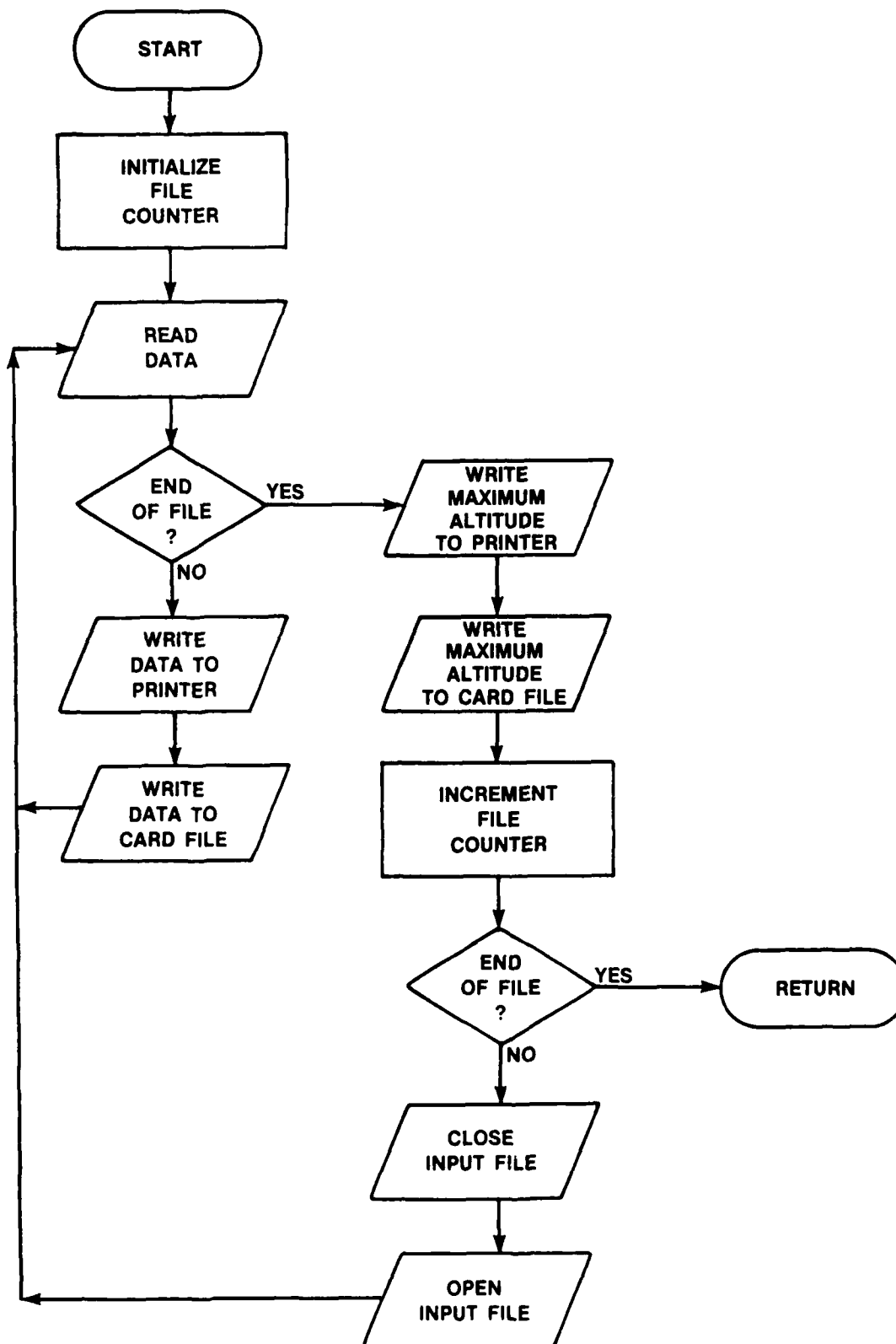
6.16 Subroutine ONEKILO



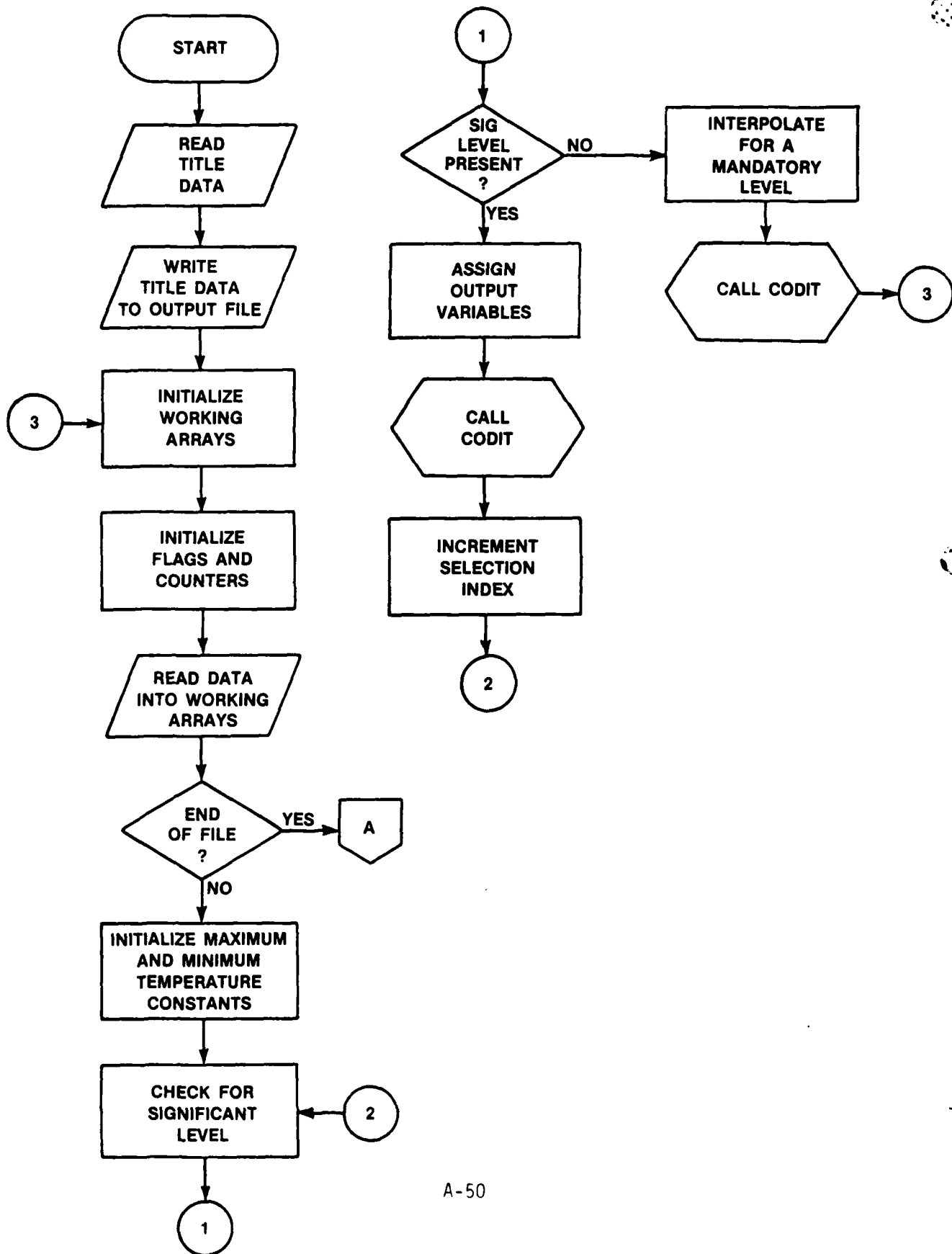
6.17 Subroutine PLOTCH



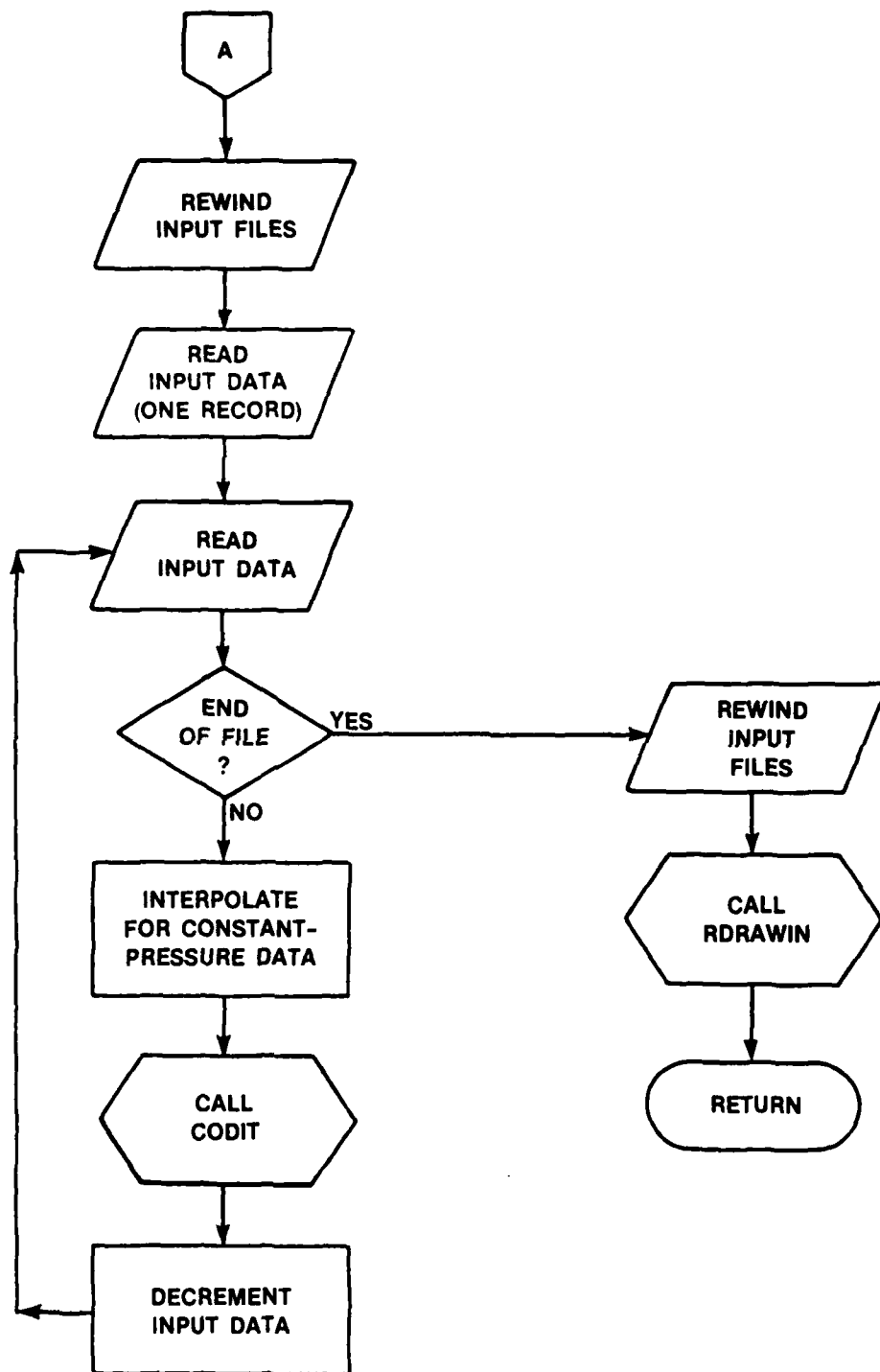
6.18 Subroutine PUTOUT



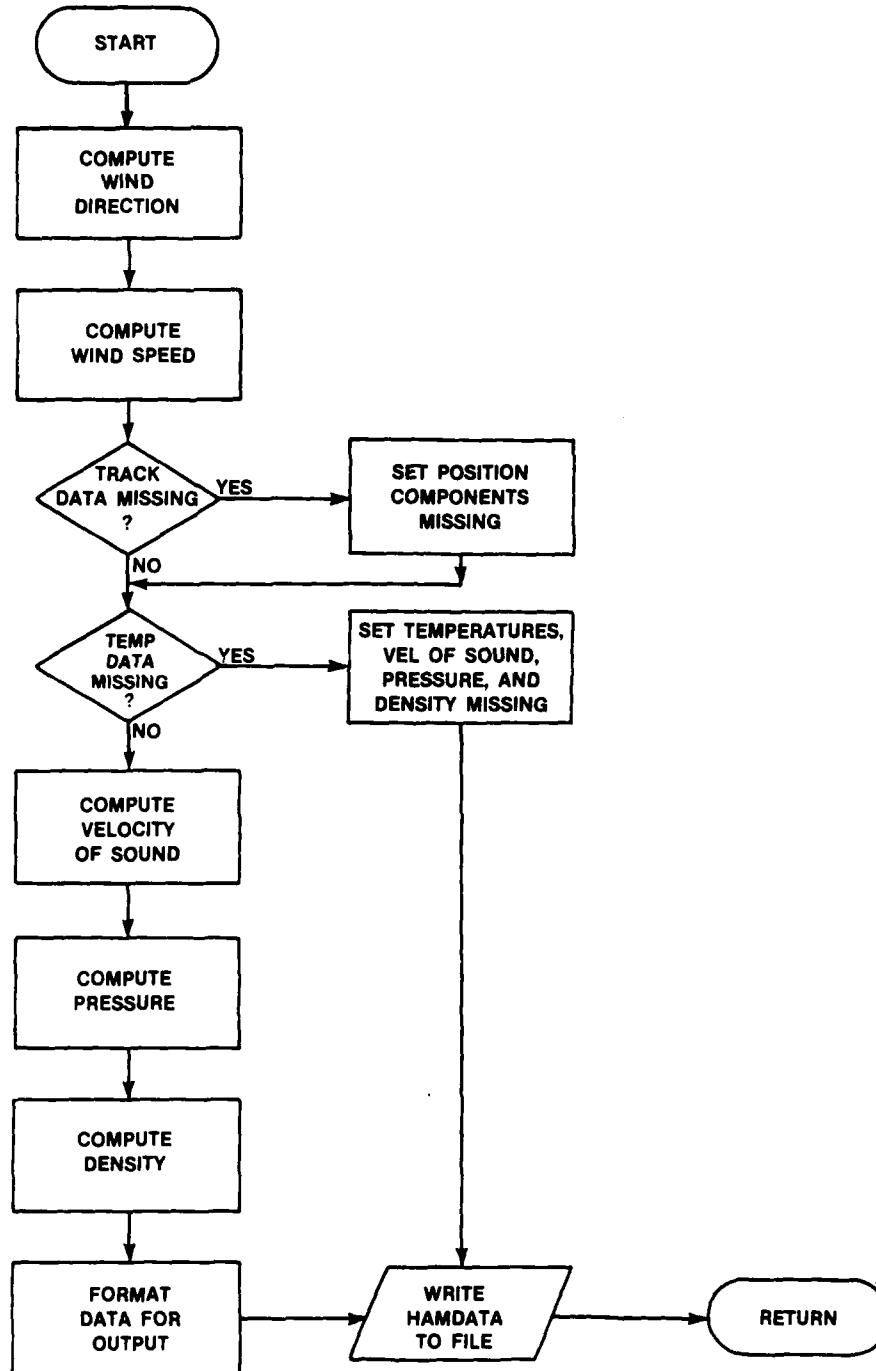
6.19.1 Subroutine ETFORM



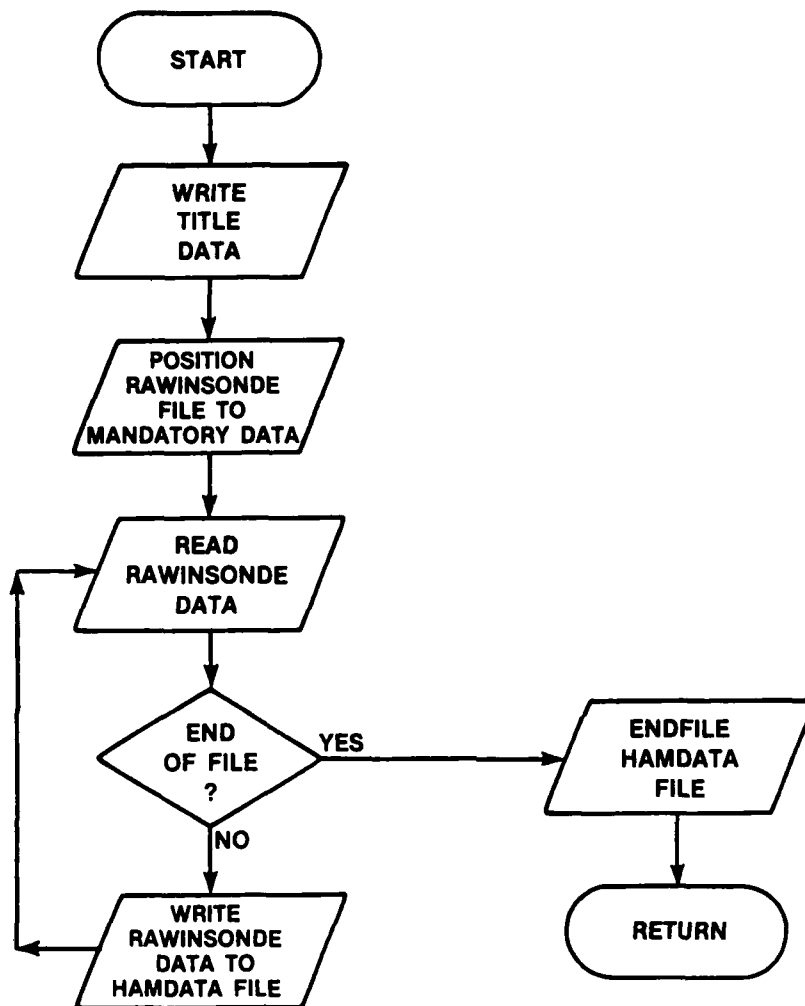
6.19.2 Subroutine ETFORM



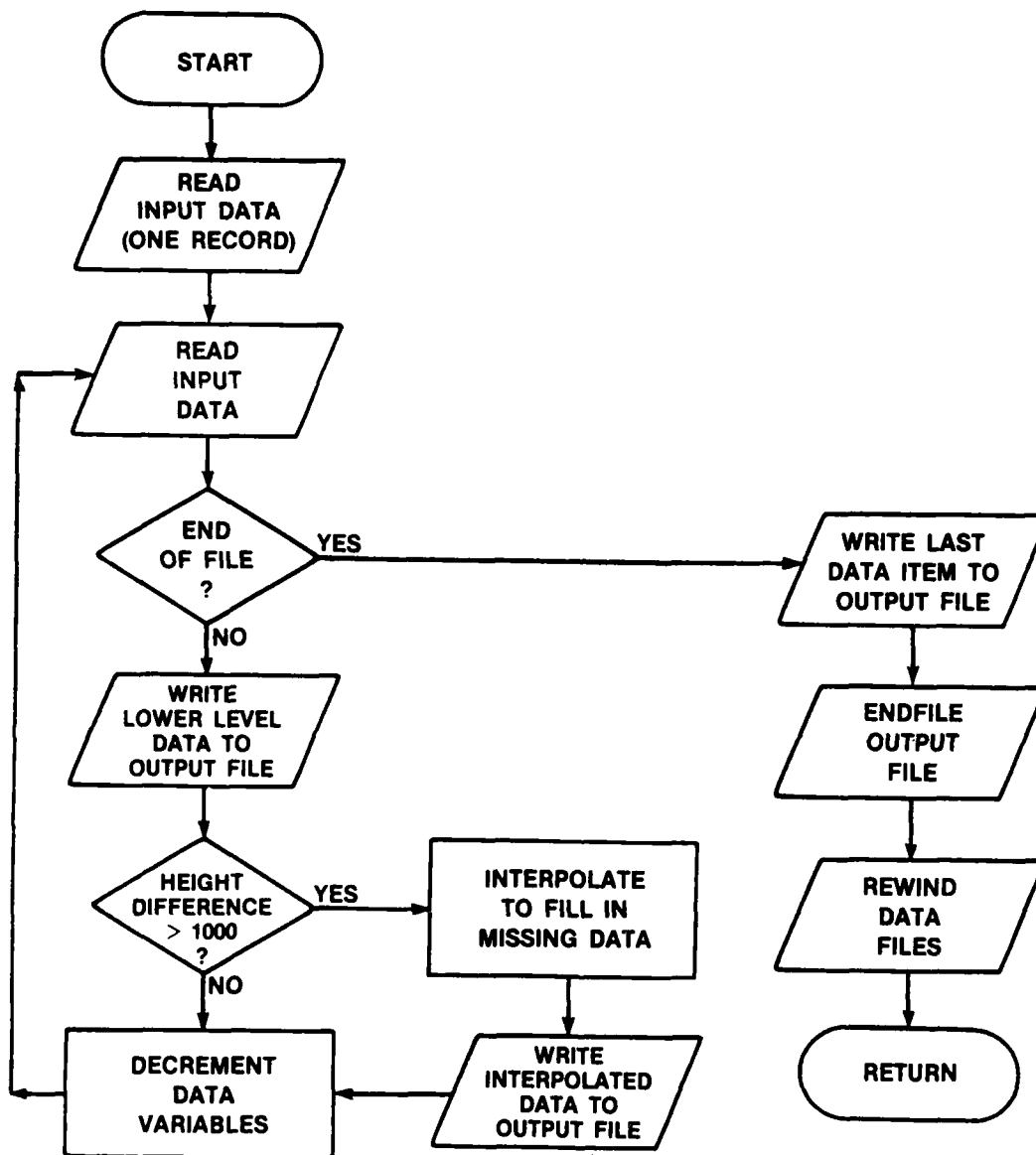
6.20 Subroutine CODIT



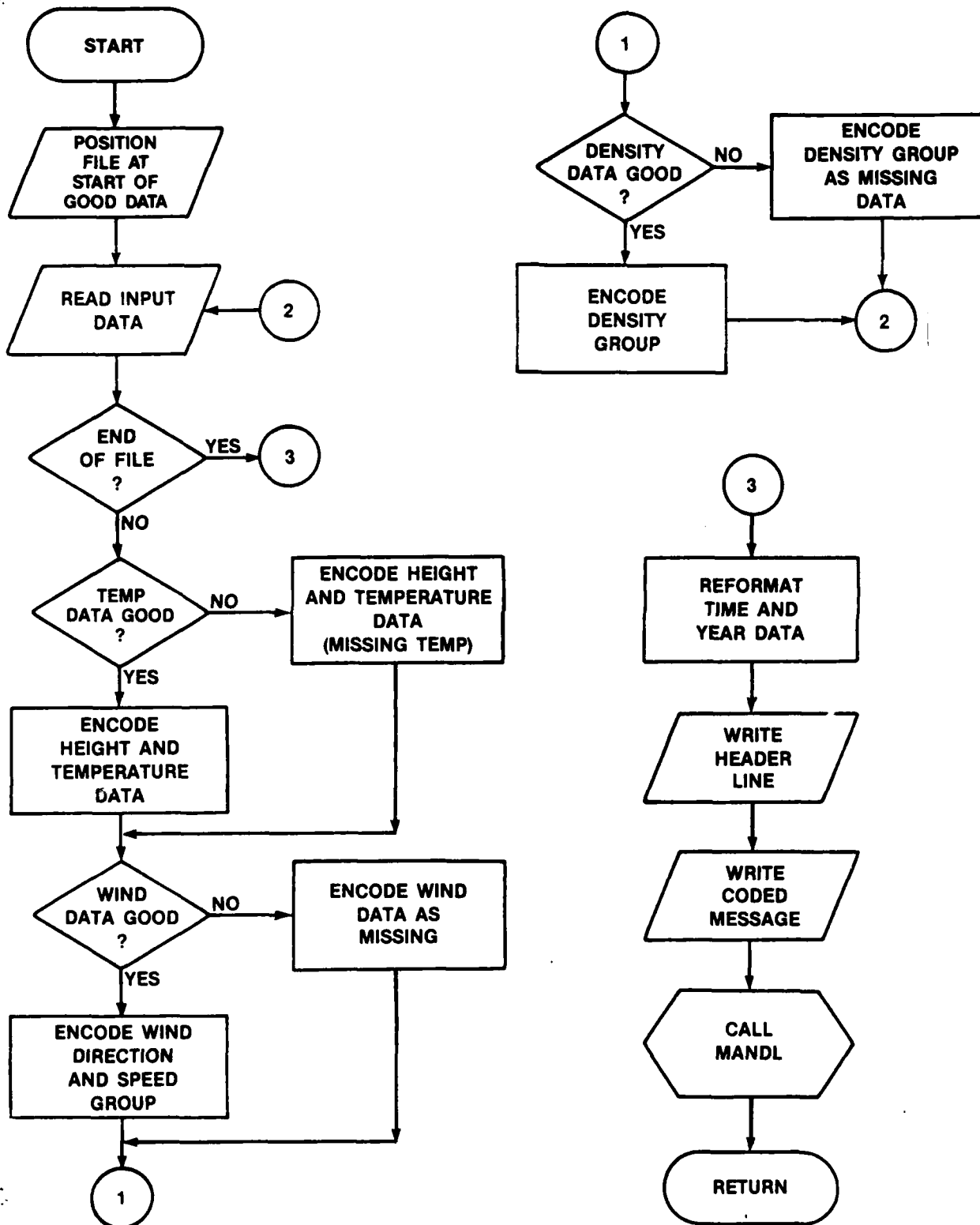
6.21 Subroutine RDRAWIN



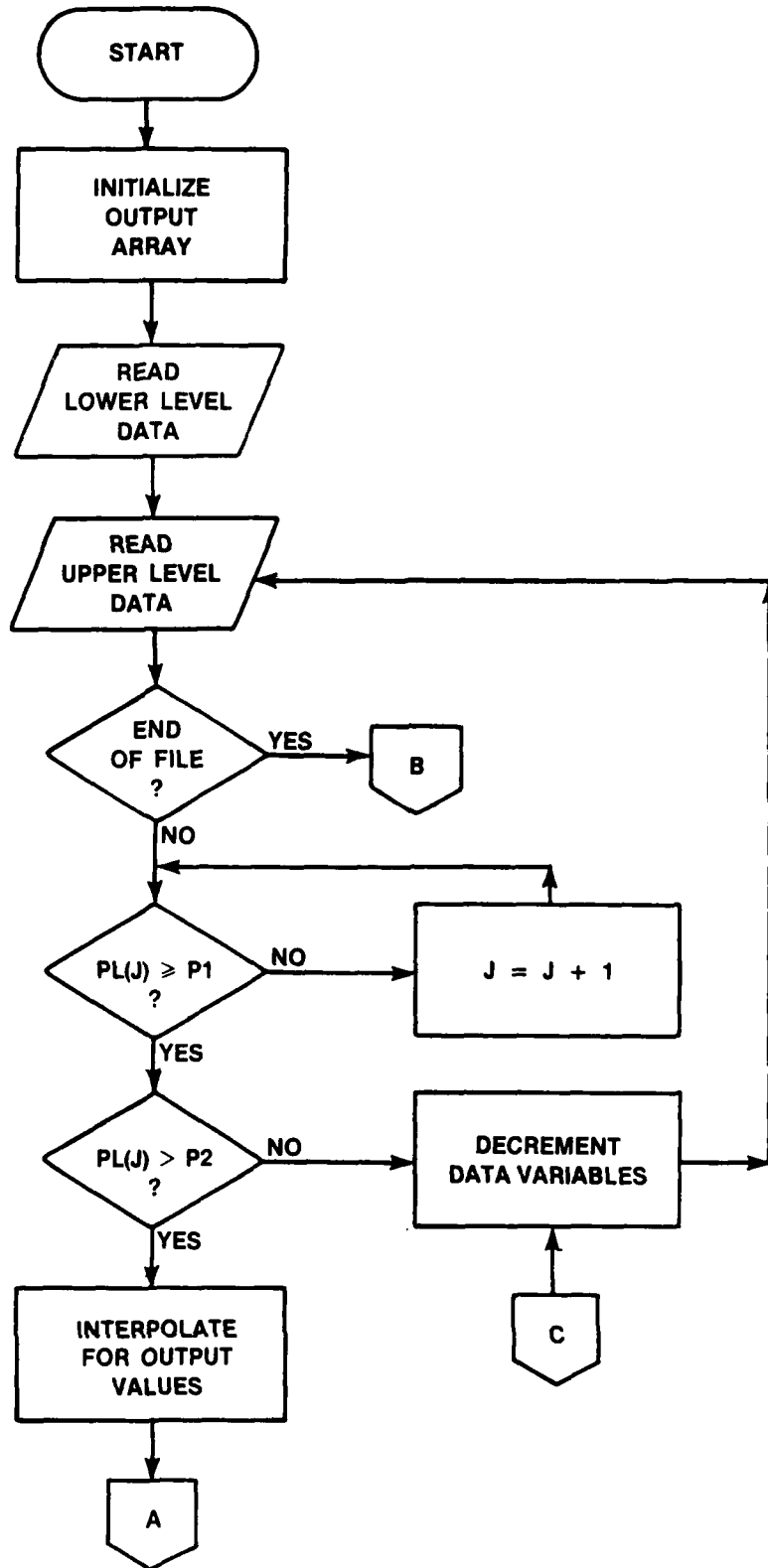
6.22 Subroutine INT



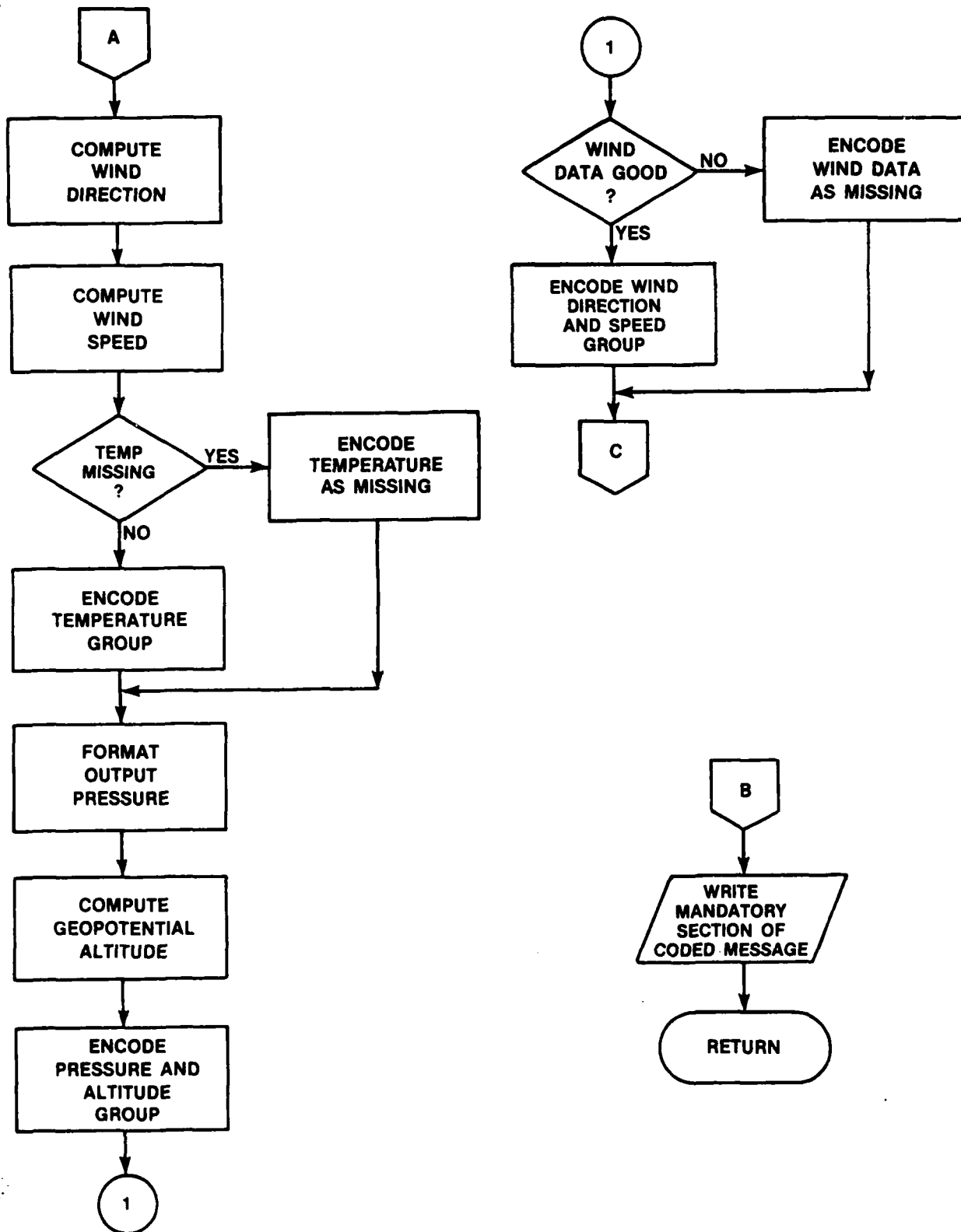
6.23 Subroutine ROCOB



6.24.1 Subroutine MANDL



6.24.2 Subroutine MANDL



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7.0 MATHEMATICAL AND PHYSICAL CONSTANTS

7.1 Program ROCK

6371229.315	(Mean Average) radius of the Earth, meters
67.442	Constant in the hypsometric equation, <i>SMT</i> , List 1968

See attachment 9, table 1 for constants ATC, BTC, CTC, CTD, and DTC.

See attachment 12 for logs of mandatory pressures.

7.2 Subroutine SIMQ

None

7.3 Subroutine OUTPUT

348.38	Gas constant for dry air with pressure in millibars and density in grams/cubic meter
331.45	Speed of sound at zero degree Celsius, miles/second
273.15	Converts degrees Celsius to degrees Kelvin

7.4 Function WDIR

57.29578	Degrees/radian
----------	----------------

7.5 Function VALUE

None

7.6 Subroutine GRAVITY

5	Station height of Cape Canaveral AFS in meters
4	Station height of Antigua AAFB in meters
79	Station height of Ascension AAFB in meters
28.29	Latitude of Cape Canaveral AFS, degrees
17.7	Latitude of Antigua AAFB, degrees
7.58	Latitude of Ascension AAFB, degrees (South)
57.29578	Degrees/radian
0.0026373	Gravity ratio constants from <i>SMT</i> , equation for Table 168 (Bibliography No. 1)
0.0000059	

7.7 Subroutine CHKOUT

0.9144	Yards to meters conversion factor
2.2	Constant used in Earth's curvature correction to elevation angle (Bibliography No. 2)

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7.8 Subroutine RD46CH

86400	Number of seconds in a day
3600	Number of seconds in an hour
60	Number of seconds in a minute
0.125	
180	Decodes 46-character
8	Radar encoded data
1.953125	
90	

7.9 Subroutine TMPMERG

3600	Number of seconds in an hour
60	Number of seconds in a minute

7.10 Subroutine INTPTMP

None

7.11 Subroutine MIDINT

None

7.12 Subroutine BANDTC

9.80616	Acceleration of gravity at 45 degrees latitude
---------	--

7.13 Subroutine COMPRSR

None

7.14 Subroutine TWOKM

None

7.15 Subroutine PRESCOM

None

7.16 Subroutine ONEKILO

1.94254	Meters/second to knots conversion factor
3.280833	Number of feet in a meter

7.17 Subroutine PLOTCH

None

7.18 Subroutine PUTOUT

None

7.19 Subroutine ETFORM

None

7.20 Subroutine CODIT

None

7.21 Subroutine RDRAWIN

None

7.22 Subroutine INT

None

7.23 Subroutine ROCOB

None

7.24 Subroutine MANDL

None

8.0 BIBLIOGRAPHY

1. List, R. J., "Smithsonian Meteorological Tables," Smithsonian Institution, Washington, D.C., Sixth Edition. Smithsonian Miscellaneous Collections, Vol. 114, 1958.
2. Gustafson, A. F., "The Error in Rawin Computations Due to Neglecting the Earth's Curvature," Bull., AMS, Vol 35, No. 7, pp. 295-300, September 1954.
3. Eddy, et al., "Determination of Winds from Meteorological Rocketsondes," University of Texas Report Number 2, University of Texas, November 1965.
4. Krumins, M. V. and Lyons, W.C., "Corrections for the Upper Atmosphere Temperatures Using a Thin Film Loop Mount," NOLTR 72-152, Naval Ordnance Laboratory, 22 June 1972.

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ATTACHMENT 1
RAEMG CODE TABLES

RAEMG CODE Tables:

Table 1

Symbol R = reason for no report and ground equipment employed

Code
Figures

0	Launch not scheduled
1	Rocket motor failure
2	Instrument (or telemetry) signal not received
3	Ground tracking equipment failure
4	Range restriction prohibited launch
5	Weather prohibited launch
6	Lack of expendables prohibited launch
7	Radar only employed
8	Radar and telemetry equipment employed
9	Telemetry equipment employed

Tables 2 and 5

Symbol A = thermodynamic correction technique
or
G = wind correction technique

Table 3

Symbol E = method of reducing data

Code
Figures

0	Manually — nomogram
1	Electronic computer
2—8	Unassigned
9	Other method

Table 4

Symbol M = type of wind sensing equipment

Code
Figures

00	No wind sensor
01	Chaff, experimental
02	Chaff, metalized
03—09	Unassigned
10	Parachute, experimental
11	Parachute, 0.5 to 3.5 meters diameter
12	Parachute, 3.6 to 5.5 meters diameter
13	Parachute, greater than 5.5 meters diameter
14	Mesh decelerator, experimental
30	Starute, experimental
31	Starute, 0.5 to 3.5 meters diameter

Table 4 (continued)

Code Figures	
32	Starute, 3.6 to 5.5 meters diameter
33	Starute, greater than 5.5 meters diameter
50	Sphere, experimental
51	Sphere, inflatable
55	Grenade, experimental
60	Chemical trail, experimental
65	Meteor trail, experimental
70	Remote sensing, experimental

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ATTACHMENT 2

SAMPLE COPY TEMPERATURE DATA WITH RESISTANCE VALUES

05542
24 06 17 14 1300 610000-110 1113.
-5-14563 2111066 010000-110 1113.
3013300 043071
0020400 041274
7774100 0306190
3030300 0474129
0000000 0474142
1.176200 0310073
4.301020 0310776
1.677120 0417535
1.644000 0450830
1.045000 0471125
1.003000 041077
1.004000 0410420
1.000000 0410401
2.176000 0202602
2.301020 0434424
2.677120 0200050
2.602050 0244310
2.776110 0400102
2.003000 0402005
2.000000 0400126
3.176000 0110042
0000000
611 0150
522 0154
750 0211
764 0283
1.600 0304
750 0345
777 0703
590 0737
551 0772
530 0800
550 0848
500 1112
443 1154
430 1300
375 1680
314 1431
320 2004
240 2400
204 3300

ROCK 3

ATTACHMENT 3

SAMPLE COPY TEMPERATURE DATA WITH CODED TEMPERATURE VALUES

0712
 01 08 07 14 1300 0100PM-11A P11311
 0774 0124
 0768 0104
 0531 0611
 0574 0244
 0001 0401
 0545 0344
 0566 0522
 0514 0704
 0749 0737
 0325 0772
 0835 0544
 0943 1112
 0931 1144
 0942 1340
 0944 1440
 1042 1451
 1037 2206
 1105 2440
 1147 2700
 1144 3000

ROCK 3

ATTACHMENT 4

SAMPLE COPY OF GMD-4 TAER DATA (ROKE OUTPUT)

40050.0	203.109	87.500	7461.5
40051.0	203.163	87.430	7462.4
40052.0	203.210	87.430	7463.3
40053.0	201.441	77.217	7020.7
40054.0	200.908	87.183	7464.2
40055.0	200.142	87.085	7115.3
40056.0	199.545	87.009	7106.4
40057.0	199.035	86.957	70920.1
40058.0	198.545	86.930	65730.9
40059.0	197.050	86.844	61175.2
40060.0	196.560	86.789	60065.5
40061.0	196.040	86.764	60170.2
40062.0	195.505	86.710	61171.0
40063.0	194.954	86.674	61220.9
40064.0	194.390	86.634	61205.3
40065.0	193.801	86.588	60067.0
40066.0	193.331	86.548	60075.0
40067.0	192.772	86.509	60075.0
40068.0	192.187	86.469	60077.3
40069.0	191.574	86.429	60077.3
40070.0	190.952	86.371	60074.2
40071.0	190.327	86.327	60074.2
40072.0	189.701	86.281	60074.2
40073.0	189.074	86.234	60074.2
40074.0	188.441	86.186	60074.2
40075.0	187.803	86.138	60074.2
40076.0	187.155	86.090	60074.2
40077.0	186.507	86.042	60074.2
40078.0	185.859	85.994	60074.2
40079.0	185.211	85.946	60074.2
40080.0	184.563	85.898	60074.2
40081.0	183.915	85.850	60074.2
40082.0	183.267	85.802	60074.2
40083.0	182.619	85.754	60074.2
40084.0	181.971	85.706	60074.2
40085.0	181.323	85.658	60074.2
40086.0	180.675	85.610	60074.2
40087.0	180.027	85.562	60074.2
40088.0	179.379	85.514	60074.2
40089.0	178.731	85.466	60074.2
40090.0	178.083	85.418	60074.2
40091.0	177.435	85.370	60074.2
40092.0	176.787	85.322	60074.2
40093.0	176.139	85.274	60074.2
40094.0	175.491	85.226	60074.2
40095.0	174.843	85.178	60074.2
40096.0	174.195	85.130	60074.2
40097.0	173.547	85.082	60074.2
40098.0	172.899	85.034	60074.2
40099.0	172.251	84.986	60074.2
40100.0	171.603	84.938	60074.2
40101.0	170.955	84.890	60074.2
40102.0	170.307	84.842	60074.2
40103.0	169.659	84.794	60074.2
40104.0	169.011	84.746	60074.2
40105.0	168.363	84.698	60074.2
40106.0	167.715	84.650	60074.2
40107.0	167.067	84.602	60074.2
40108.0	166.419	84.554	60074.2
40109.0	165.771	84.506	60074.2
40110.0	165.123	84.458	60074.2
40111.0	164.475	84.410	60074.2
40112.0	163.827	84.362	60074.2
40113.0	163.179	84.314	60074.2
40114.0	162.531	84.266	60074.2
40115.0	161.883	84.218	60074.2
40116.0	161.235	84.170	60074.2
40117.0	160.587	84.122	60074.2
40118.0	159.939	84.074	60074.2
40119.0	159.291	84.026	60074.2
40120.0	158.643	83.978	60074.2
40121.0	157.995	83.930	60074.2
40122.0	157.347	83.882	60074.2
40123.0	156.699	83.834	60074.2
40124.0	156.051	83.786	60074.2
40125.0	155.403	83.738	60074.2
40126.0	154.755	83.690	60074.2
40127.0	154.107	83.642	60074.2
40128.0	153.459	83.594	60

50382.0	171.837	59.041	44496.7
50400.0	173.093	59.030	44500.0
50418.0	173.174	59.783	44514.4
50436.0	174.101	59.030	44528.3
50454.0	175.372	59.718	44542.0
50472.0	175.530	57.147	44555.6
50490.0	177.777	57.504	44569.7
50508.0	177.066	57.154	44583.4
50526.0	180.345	56.432	44597.0
50544.0	181.673	56.150	44610.6
50562.0	182.974	56.334	44624.7
50580.0	184.203	56.142	44638.4
50598.0	185.425	55.930	44652.1
50616.0	186.564	55.661	44665.0
50634.0	188.270	55.350	44678.1
50652.0	189.401	55.012	44691.3
50670.0	190.605	54.684	44704.7
50688.0	191.641	54.364	44718.2
50706.0	192.631	54.049	44731.0
50724.0	193.600	53.596	44744.0
50742.0	195.869	53.313	44757.1
50760.0	195.557	52.917	44770.2
50778.0	198.777	51.528	44783.7
50796.0	201.706	50.394	44797.0
50814.0	204.274	49.244	44810.8
50832.0	205.471	48.122	44824.1
50850.0	208.258	46.959	44837.0
50868.0	209.489	45.840	44850.4
50886.0	210.580	44.957	44863.0
50904.0	211.006	44.254	44876.7
50922.0	211.050	43.595	44890.7
50940.0	210.962	42.821	44904.0
50958.0	210.855	41.962	44917.1
50976.0	210.731	41.125	44930.4
50994.0	213.506	40.435	44943.7
51012.0	210.192	39.847	44957.0
51030.0	209.838	39.316	44970.0
51048.0	209.485	38.704	44983.4
51066.0	209.226	38.135	44996.0
51084.0	208.250	37.079	45009.2
51102.0	208.670	37.690	45022.0

ROCK 3

ATTACHMENT 5
SAMPLE COPY OF MATTY DECK

45955.0 75.013 70.771 70.000.3
 45971.0 75.013 70.771 70.000.3
 45977.0 75.013 70.771 70.000.3
 45983.0 75.013 70.771 70.000.3
 45989.0 75.013 70.771 70.000.3
 45995.0 75.013 70.771 70.000.3
 46001.0 75.013 70.771 70.000.3
 46007.0 75.013 70.771 70.000.3
 46013.0 75.013 70.771 70.000.3
 46019.0 75.013 70.771 70.000.3
 46025.0 75.013 70.771 70.000.3
 46031.0 75.013 70.771 70.000.3
 46037.0 75.013 70.771 70.000.3
 46043.0 75.013 70.771 70.000.3
 46049.0 75.013 70.771 70.000.3
 46055.0 75.013 70.771 70.000.3
 46061.0 75.013 70.771 70.000.3
 46067.0 75.013 70.771 70.000.3
 46073.0 75.013 70.771 70.000.3
 46079.0 75.013 70.771 70.000.3
 46085.0 75.013 70.771 70.000.3
 46091.0 75.013 70.771 70.000.3
 46097.0 75.013 70.771 70.000.3
 46103.0 75.013 70.771 70.000.3
 46109.0 75.013 70.771 70.000.3
 46115.0 75.013 70.771 70.000.3
 46121.0 75.013 70.771 70.000.3
 46127.0 75.013 70.771 70.000.3
 46133.0 75.013 70.771 70.000.3
 46139.0 75.013 70.771 70.000.3
 46145.0 75.013 70.771 70.000.3
 46151.0 75.013 70.771 70.000.3
 46157.0 75.013 70.771 70.000.3
 46163.0 75.013 70.771 70.000.3
 46169.0 75.013 70.771 70.000.3
 46175.0 75.013 70.771 70.000.3
 46181.0 75.013 70.771 70.000.3
 46187.0 75.013 70.771 70.000.3
 46193.0 75.013 70.771 70.000.3
 46199.0 75.013 70.771 70.000.3
 46205.0 75.013 70.771 70.000.3
 46211.0 75.013 70.771 70.000.3
 46217.0 75.013 70.771 70.000.3
 46223.0 75.013 70.771 70.000.3
 46229.0 75.013 70.771 70.000.3
 46235.0 75.013 70.771 70.000.3
 46241.0 75.013 70.771 70.000.3
 46247.0 75.013 70.771 70.000.3
 46253.0 75.013 70.771 70.000.3
 46259.0 75.013 70.771 70.000.3
 46265.0 75.013 70.771 70.000.3
 46271.0 75.013 70.771 70.000.3
 46277.0 75.013 70.771 70.000.3
 46283.0 75.013 70.771 70.000.3
 46289.0 75.013 70.771 70.000.3
 46295.0 75.013 70.771 70.000.3
 46301.0 75.013 70.771 70.000.3
 46307.0 75.013 70.771 70.000.3
 46313.0 75.013 70.771 70.000.3
 46319.0 75.013 70.771 70.000.3
 46325.0 75.013 70.771 70.000.3
 46331.0 75.013 70.771 70.000.3
 46337.0 75.013 70.771 70.000.3

[illegible]

ROCK 3

ATTACHMENT 6
SAMPLE COPY OF 46-CHARACTER DATA

[illegible]

ROCK 3

ATTACHMENT 7

**SAMPLE COPY OF PRINTER OUTPUT
(SEE ATTACHMENT 5 FOR INPUT DATA)**

49250	171	24	269.41	-1.65	.8851	1.1445	39.07	329.18	.005
49500	169	25	269.13	-1.77	.8579	1.1105	40.27	329.00	.005
49750	166	25	268.85	-1.88	.8316	1.0775	41.48	328.83	.005
50000	163	26	268.58	-1.99	.8060	1.0455	42.69	328.66	.005
50250	162	26	268.89	-2.05	.7813	1.0123	43.46	328.85	.002
50500	162	26	269.44	-2.08	.7574	.9793	44.06	329.19	.001
50750	161	26	270.00	-2.12	.7343	.9474	44.65	329.53	.001
51000	160	26	270.55	-2.15	.7118	.9166	45.25	329.87	.001
51250	160	26	271.11	-2.19	.6900	.8867	45.84	330.21	.001
51500	160	26	271.44	-2.21	.6689	.8585	46.39	330.41	.000
51750	161	26	271.32	-2.23	.6486	.8326	46.85	330.37	.002
52000	162	26	271.30	-2.24	.6288	.8075	47.32	330.33	.002
52250	163	26	271.23	-2.25	.6097	.7831	47.78	330.28	.002
52500	164	26	271.16	-2.27	.5911	.7595	48.24	330.24	.002
52750	166	26	271.09	-2.28	.5731	.7366	48.70	330.20	.002
53000	167	26	270.95	-2.33	.5557	.7145	49.64	330.11	.002
53250	167	26	270.76	-2.41	.5387	.6931	50.83	330.00	.002
53500	168	26	270.58	-2.48	.5233	.6725	52.03	329.89	.002
53750	169	26	270.40	-2.56	.5063	.6524	53.22	329.78	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.66	.002
54250	170	27	270.03	-2.71	.4759	.6140	55.61	329.55	.002
54500	171	26	269.77	-2.77	.4614	.5958	56.62	329.39	.003
54750	174	25	269.35	-2.80	.4472	.5784	57.24	329.14	.007
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.007
55250	180	22	268.52	-2.87	.4201	.5451	58.54	328.63	.007
55500	183	21	268.11	-2.90	.4072	.5292	59.18	328.38	.007
55750	187	20	267.69	-2.94	.3947	.5137	59.82	328.12	.007
56000	191	19	267.28	-2.97	.3826	.4987	60.46	327.87	.007
56250	184	18	266.85	-3.03	.3708	.4844	61.22	327.48	.007
56500	201	17	265.50	-3.16	.3591	.4712	62.29	326.77	.008
56750	207	16	264.35	-3.28	.3478	.4584	63.35	326.07	.008
57000	214	15	263.20	-3.41	.3369	.4460	64.42	325.36	.008
57250	221	14	262.05	-3.53	.3264	.4339	65.49	324.65	.008
57500	229	14	260.90	-3.66	.3161	.4221	66.55	323.93	.008
57750	237	14	259.75	-3.78	.3062	.4107	67.62	323.22	.008
58000	245	14	258.60	-3.91	.2966	.3995	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

ROCS 3

MAXIMUM ALTITUDE 61559

[illegible]

ROCK 3

42534.0	27.077	25.101	41.001.8	150.003	1.07	4.001	-1.1	-1.7	640.74	-291.04
42737.0	27.075	25.100	41.002.0	150.002	1.07	4.000	-1.1	-1.64	641.80	-228.64
42737.0	27.073	25.099	4042.40	150.001	1.07	4.000	-1.1	-1.64	745.24	-251.40

***** THERMISTOR (CONTINUED) *****

ROCKET NO.

WALL STATION

TEST NAME

ROCKET SUPER (TRY 044-110)

CAPE CANAVERAL AFS, FL.

13007 7 AUG 1964

CAPE CANAVERAL AFS, FLORIDA

13007 7 AUG 1964

ALTITUDE
METERS

ROCKET

TEMPERATURE, DEGREES C

RAVISEMENT

DIFFERENCE

20000	-61.00	-51.70	-9.1
20250	-61.33	-60.80	-0.5
20500	-60.66	-60.00	-0.4
20750	-60.09	-59.10	-1.0
21000	-59.56	-58.60	-1.0
21250	-59.03	-57.70	-1.3
21500	-58.49	-57.00	-1.5
21750	-57.94	-56.50	-1.4
22000	-57.39	-56.70	-0.7
22250	-56.85	-56.40	-0.5
22500	-56.33	-55.60	-0.7
22750	-55.82	-55.70	-0.1
23000	-55.33	-55.30	-0.0
23250	-54.85	-54.60	-0.2
23500	-54.43	-53.90	-0.5
23750	-54.23	-53.70	-0.5
24000	-54.23	-54.10	-0.1
24250	-54.36	-53.80	-0.6
24500	-54.48	-53.20	-1.3
24750	-54.28	-53.10	-1.2
25000	-53.70	-52.80	-0.9
25250	-52.70	-51.90	-0.8
25500	-51.36	-50.80	-0.6
25750	-50.22	-49.40	-0.8
26000	-49.32	-47.80	-1.5
26250	-48.69	-47.70	-1.0
26500	-48.25	-47.80	-0.5
26750	-47.86	-47.10	-0.7
27000	-47.46	-46.50	-1.0
27250	-47.07	-46.60	-0.5
27500	-46.65	-46.40	-0.3
27750	-46.25	-46.00	-0.3
28000	-45.83	-45.50	-0.3
28250	-45.42	-45.00	-0.4
28500	-45.02	-44.60	-0.4
28750	-44.75	-44.20	-0.6
29000	-44.51	-43.90	-0.6
29250	-44.39	-43.70	-0.7
29500	-44.26	-43.50	-0.8
29750	-44.14	-43.30	-0.8
30000	-44.01	-43.30	-0.7

TEST NUMBER 43-2
CAPE CANEVERAL AFB, FL.
13 JUL 7 410 1044

	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	450
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TEST NUMBER 137
CAPE CANAVERAL AFB FL
13007 7 AUG 1964

SUPER LENT 040-111

ALT GEOM	DTP DEC	COG DEC	TEMP K	TEMP C/100	PRESS MKS	DENSITY G/CM3	RF MKS	VC MKS	CHP /SEC
20000	14	17	211.44	-4.3	909.0000	909.0000	3.71	231.63	.009
21000	91	17	213.29	-4.4	69.7503	61.1614	5.53	203.39	.002
22000	74	17	215.76	-4.5	47.4979	47.46199	5.39	204.68	.003
23000	100	15	217.62	-4.6	36.3541	36.1435	5.56	205.69	.005
24000	100	16	218.02	-4.7	31.1390	40.5547	6.77	206.73	.001
25000	1	18	219.42	-4.8	26.6804	42.3511	7.02	207.00	.004
26000	4	22	223.63	-5.2	22.9055	35.6512	7.97	207.04	.004
27000	45	23	225.69	-5.4	19.7078	30.4713	9.76	201.23	.001
28000	44	23	227.32	-5.6	16.9755	26.0163	8.88	303.37	.000
29000	37	23	228.64	-5.6	14.6377	22.3039	9.93	303.24	.002
30000	4	25	229.14	-5.0	12.6293	19.2017	11.34	303.57	.002
31000	93	25	231.15	-4.7	10.9041	16.4412	12.40	305.84	.002
32000	90	26	234.76	-4.8	9.4334	13.9991	12.87	307.28	.000
33000	48	26	237.16	-4.9	8.1761	12.0104	13.32	308.84	.001
34000	19	25	238.57	-7.2	7.0957	10.3618	15.53	309.76	.000
35000	92	26	237.40	-7.8	6.1584	9.0373	17.36	308.03	.002
36000	93	27	234.15	-8.3	5.3437	7.8169	17.27	309.49	.001
37000	94	27	240.80	-8.8	4.6415	6.7152	16.64	311.20	.001
38000	37	33	247.14	-9.8	4.0380	5.8098	19.17	312.07	.003
39000	98	35	244.56	-1.05	3.5155	5.0079	23.24	313.63	.004
40000	36	36	247.61	-1.18	3.0661	4.3139	26.81	315.57	.002
41000	56	35	250.47	-1.22	2.6784	3.7255	28.22	317.39	.006
42000	71	37	253.26	-1.24	2.3433	3.2234	28.33	319.16	.010
43000	24	42	255.76	-1.26	2.0532	2.7967	29.60	320.73	.010
44000	77	43	257.25	-1.34	1.9009	2.4389	29.56	321.66	.005
45000	78	46	258.68	-1.41	1.5809	2.1291	31.77	322.55	.003
46000	71	53	259.60	-1.56	1.3887	1.8615	35.39	323.31	.009
47000	70	55	260.97	-1.73	1.2206	1.6295	38.31	323.97	.008
48000	37	53	261.00	-1.91	1.0735	1.4279	43.44	324.56	.009
49000	38	53	262.83	-2.36	.9445	1.2519	47.74	325.13	.009
50000	107	41	266.96	-2.64	.8320	1.0857	51.91	327.68	.015
51000	129	35	269.91	-2.20	.7344	.9479	55.08	328.48	.015
52000	131	32	264.56	-2.27	.6478	.8530	57.48	326.20	.003
53000	134	40	261.93	-2.96	.5702	.7584	59.58	326.57	.017
54000	30	47	260.95	-3.10	.5016	.6690	63.70	323.06	.015
55000	52	53	257.25	-2.99	.4408	.5960	67.25	321.62	.009
56000	45	53	259.35	-2.45	.3865	.5335	71.09	318.58	.003
57000	94	49	247.62	-3.93	.3380	.4756	74.76	315.58	.009
58000	44	42	243.04	-4.53	.2949	.4227	79.20	312.66	.007
59000	49	44	249.94	0.00	.99999999	.99999999	85.58	999.90	.015
60000	64	44	249.60	0.00	.99999999	.99999999	94.29	999.90	.018
61000	57	44	249.00	0.00	.99999999	.99999999	94.54	999.90	.019

MAXIMUM ALTITUDE 60919 GEOM

5000	10	37	257.44	-2.74	1.164	1.164	32.64	32.64	.017
5050	15	37	257.11	-2.64	1.171	1.171	32.64	32.64	.016
5100	20	37	256.78	-2.40	1.176	1.176	32.64	32.64	.015
5150	25	37	256.45	-2.20	1.181	1.181	32.64	32.64	.013
5200	30	37	256.12	-2.17	1.186	1.186	32.64	32.64	.013
5250	35	37	255.79	-2.04	1.191	1.191	32.64	32.64	.011
5300	40	37	255.46	-2.12	1.196	1.196	32.64	32.64	.008
5350	45	37	255.13	-2.27	1.201	1.201	32.64	32.64	.008
5400	50	37	254.80	-2.40	1.206	1.206	32.64	32.64	.016
5450	55	37	254.47	-2.56	1.211	1.211	32.64	32.64	.017
5500	60	37	254.14	-2.65	1.216	1.216	32.64	32.64	.017
5550	65	37	253.81	-2.90	1.221	1.221	32.64	32.64	.017
5600	70	37	253.48	-3.03	1.226	1.226	32.64	32.64	.015
5650	75	37	253.15	-3.11	1.231	1.231	32.64	32.64	.015
5700	80	37	252.82	-3.13	1.236	1.236	32.64	32.64	.006
5750	85	37	252.49	-3.21	1.241	1.241	32.64	32.64	.002
5800	90	37	252.16	-3.28	1.246	1.246	32.64	32.64	.003
5850	95	37	251.83	-3.45	1.251	1.251	32.64	32.64	.008
5900	100	37	251.50	-3.58	1.256	1.256	32.64	32.64	.009
5950	105	37	251.17	-3.66	1.261	1.261	32.64	32.64	.011
6000	110	37	250.84	-3.78	1.266	1.266	32.64	32.64	.009
6050	115	37	250.51	-3.93	1.271	1.271	32.64	32.64	.008
6100	120	37	250.18	-4.05	1.276	1.276	32.64	32.64	.007
6150	125	37	249.85	-4.17	1.281	1.281	32.64	32.64	.007
6200	130	37	249.52	-4.33	1.286	1.286	32.64	32.64	.009
6250	135	37	249.19	-4.43	1.291	1.291	32.64	32.64	.010
6300	140	37	248.86	-4.93	1.296	1.296	32.64	32.64	.014
6350	145	37	248.53	0.00	1.301	1.301	32.64	32.64	.014
6400	150	37	248.20	0.00	1.306	1.306	32.64	32.64	.018
6450	155	37	247.87	0.00	1.311	1.311	32.64	32.64	.017
6500	160	37	247.54	0.00	1.316	1.316	32.64	32.64	.017
6550	165	37	247.21	0.00	1.321	1.321	32.64	32.64	.018
6600	170	37	246.88	0.00	1.326	1.326	32.64	32.64	.018
6650	175	37	246.55	0.00	1.331	1.331	32.64	32.64	.019
6700	180	37	246.22	0.00	1.336	1.336	32.64	32.64	.019
6750	185	37	245.89	0.00	1.341	1.341	32.64	32.64	.019
6800	190	37	245.56	0.00	1.346	1.346	32.64	32.64	.019
6850	195	37	245.23	0.00	1.351	1.351	32.64	32.64	.019
6900	200	37	244.90	0.00	1.356	1.356	32.64	32.64	.019
6950	205	37	244.57	0.00	1.361	1.361	32.64	32.64	.019
7000	210	37	244.24	0.00	1.366	1.366	32.64	32.64	.019
7050	215	37	243.91	0.00	1.371	1.371	32.64	32.64	.019
7100	220	37	243.58	0.00	1.376	1.376	32.64	32.64	.019
7150	225	37	243.25	0.00	1.381	1.381	32.64	32.64	.019
7200	230	37	242.92	0.00	1.386	1.386	32.64	32.64	.019
7250	235	37	242.59	0.00	1.391	1.391	32.64	32.64	.019
7300	240	37	242.26	0.00	1.396	1.396	32.64	32.64	.019
7350	245	37	241.93	0.00	1.401	1.401	32.64	32.64	.019
7400	250	37	241.60	0.00	1.406	1.406	32.64	32.64	.019
7450	255	37	241.27	0.00	1.411	1.411	32.64	32.64	.019
7500	260	37	240.94	0.00	1.416	1.416	32.64	32.64	.019
7550	265	37	240.61	0.00	1.421	1.421	32.64	32.64	.019
7600	270	37	240.28	0.00	1.426	1.426	32.64	32.64	.019
7650	275	37	239.95	0.00	1.431	1.431	32.64	32.64	.019
7700	280	37	239.62	0.00	1.436	1.436	32.64	32.64	.019
7750	285	37	239.29	0.00	1.441	1.441	32.64	32.64	.019
7800	290	37	238.96	0.00	1.446	1.446	32.64	32.64	.019
7850	295	37	238.63	0.00	1.451	1.451	32.64	32.64	.019
7900	300	37	238.30	0.00	1.456	1.456	32.64	32.64	.019
7950	305	37	237.97	0.00	1.461	1.461	32.64	32.64	.019
8000	310	37	237.64	0.00	1.466	1.466	32.64	32.64	.019
8050	315	37	237.31	0.00	1.471	1.471	32.64	32.64	.019
8100	320	37	236.98	0.00	1.476	1.476	32.64	32.64	.019
8150	325	37	236.65	0.00	1.481	1.481	32.64	32.64	.019
8200	330	37	236.32	0.00	1.486	1.486	32.64	32.64	.019
8250	335	37	235.99	0.00	1.491	1.491	32.64	32.64	.019
8300	340	37	235.66	0.00	1.496	1.496	32.64	32.64	.019
8350	345	37	235.33	0.00	1.501	1.501	32.64	32.64	.019
8400	350	37	235.00	0.00	1.506	1.506	32.64	32.64	.019
8450	355	37	234.67	0.00	1.511	1.511	32.64	32.64	.019
8500	360	37	234.34	0.00	1.516	1.516	32.64	32.64	.019
8550	365	37	234.01	0.00	1.521	1.521	32.64	32.64	.019
8600	370	37	233.68	0.00	1.526	1.526	32.64	32.64	.019
8650	375	37	233.35	0.00	1.531	1.531	32.64	32.64	.019
8700	380	37	233.02	0.00	1.536	1.536	32.64	32.64	.019
8750	385	37	232.69	0.00	1.541	1.541	32.64	32.64	.019
8800	390	37	232.36	0.00	1.546	1.546	32.64	32.64	.019
8850	395	37	232.03	0.00	1.551	1.551	32.64	32.64	.019
8900	400	37	231.70	0.00	1.556	1.556	32.64	32.64	.019
8950	405	37	231.37	0.00	1.561	1.561	32.64	32.64	.019
9000	410	37	231.04	0.00	1.566	1.566	32.64	32.64	.019
9050	415	37	230.71	0.00	1.571	1.571	32.64	32.64	.019
9100	420	37	230.38	0.00	1.576	1.576	32.64	32.64	.019
9150	425	37	230.05	0.00	1.581	1.581	32.64	32.64	.019
9200	430	37	229.72	0.00	1.586	1.586	32.64	32.64	.019
9250	435	37	229.39	0.00	1.591	1.591	32.64	32.64	.019
9300	440	37	229.06	0.00	1.596	1.596	32.64	32.64	.019
9350	445	37	228.73	0.00	1.601	1.601	32.64	32.64	.019
9400	450	37	228.40	0.00	1.606	1.606	32.64	32.64	.019
9450	455	37	228.07	0.00	1.611	1.611	32.64	32.64	.019
9500	460	37	227.74	0.00	1.616	1.616	32.64	32.64	.019
9550	465	37	227.41	0.00	1.621	1.621	32.64	32.64	.019
9600	470	37	227.08	0.00	1.626	1.626	32.64	32.64	.019
9650	475	37	226.75	0.00	1.631	1.631	32.64	32.64	.019
9700	480	37	226.42	0.00	1.636	1.636	32.64	32.64	.019
9750	485	37	226.09	0.00	1.641	1.641	32.64	32.64	.019
9800	490	37	225.76	0.00	1.646	1.646	32.64	32.64	.019
9850	495	37	225.43	0.00	1.651	1.651	32.64	32.64	.019
9900	500	37	225.10	0.00	1.656	1.656	32.64	32.64	.019
9950	505	37	224.77	0.00	1.661	1.661	32.64	32.64	.019
10000	510	37	224.44	0.00	1.666	1.666	32.64	32.64	.019

MAXIMUM ALTITUDE 5391.4 GEOMM

TEST NUMBER 132
CAPE CANAVERAL AFB, FLA.
1300Z 7 AUG 1964

SUPER LOKI PWN-110
ALT 314 521
SCOTCH 314 521

SCOTCH	ALT	314	521	TEMP	TEMP	TEMP	PROCS	DENSITY	RF	VC	CHP
314	521	521	521	°C	°C	°C	MKS	G/M3	DBS	MTC	/SEC
50000	10	34	211.04	-43	57.2777	94.2345	12.40	164.51	12.40	164.51	.000
67000	20	35	212.30	-43	54.5538	84.5234	15.32	167.63	15.32	167.63	.004
69000	30	33	213.61	-44	51.9666	84.6959	18.17	164.54	18.17	164.54	.006
70000	40	30	213.65	-44	49.5135	80.7344	18.04	169.44	18.04	169.44	.006
73000	50	24	214.31	-45	47.1813	74.6092	16.44	170.31	16.44	170.31	.004
75000	60	27	216.07	-44	44.9662	72.8719	17.67	171.19	17.67	171.19	.004
76000	70	25	215.64	-45	42.8619	69.2454	17.71	172.00	17.71	172.00	.004
78000	80	29	216.30	-46	40.8622	65.3139	16.00	172.94	16.00	172.94	.002
79000	90	30	216.94	-46	38.9614	62.5085	15.39	173.80	15.39	173.80	.006
79000	90	30	217.55	-46	37.1562	59.4987	19.61	174.61	19.61	174.61	.006
79000	100	30	218.14	-47	35.4337	56.5930	20.30	175.39	20.30	175.39	.005
79000	110	30	218.67	-47	33.8009	53.8516	21.44	176.04	21.44	176.04	.003
79000	120	30	218.93	-47	32.2444	51.3107	21.52	176.43	21.52	176.43	.001
79000	130	31	218.89	-47	30.7604	48.9605	22.53	176.36	22.53	176.36	.004
80000	140	31	218.73	-48	29.3442	46.7382	23.25	176.16	23.25	176.16	.005
81000	150	33	218.40	-49	27.9932	44.5712	23.36	176.24	23.36	176.24	.006
82000	160	35	219.42	-50	26.7065	42.4023	23.00	177.09	23.00	177.09	.007
83000	170	34	220.71	-51	25.4840	40.2246	22.25	178.77	22.25	178.77	.005
84000	180	41	227.29	-51	24.3250	38.1229	22.20	180.84	22.20	180.84	.004
85000	190	42	223.60	-51	23.2256	36.1867	25.26	182.54	25.26	182.54	.002
86000	200	43	224.36	-53	22.1814	34.4419	28.24	183.54	28.24	183.54	.002
87000	210	44	226.93	-53	21.1871	32.8155	30.70	184.27	30.70	184.27	.001
88000	220	44	225.42	-54	20.2391	31.2792	32.24	184.61	32.24	184.61	.001
89000	230	45	225.89	-55	19.3357	29.8209	31.87	185.52	31.87	185.52	.001
90000	240	44	226.31	-55	18.4747	28.4314	31.09	186.15	31.09	186.15	.001
91000	250	44	226.88	-55	17.6535	27.1076	30.11	186.80	30.11	186.80	.001
92000	260	44	227.39	-56	16.8706	25.8476	28.96	187.46	28.96	187.46	.000
93000	270	44	227.88	-56	16.1245	24.6507	29.42	188.10	29.42	188.10	.002
94000	280	44	228.30	-56	15.4125	23.5195	30.60	188.63	30.60	188.63	.002
95000	290	45	228.60	-56	14.7330	22.4425	32.33	189.03	32.33	189.03	.002
96000	300	45	228.77	-58	14.0845	21.4488	33.90	189.24	33.90	189.24	.002
97000	310	45	228.92	-59	13.4648	20.4914	35.37	189.43	35.37	189.43	.002
98000	320	47	229.07	-59	12.8729	19.5776	36.66	189.63	36.66	189.63	.002
99000	330	48	229.29	-61	12.3076	18.6999	37.83	189.91	37.83	189.91	.002
100000	340	49	229.56	-63	11.7675	17.8583	38.91	190.24	38.91	190.24	.001
101000	350	50	230.36	-65	11.2531	17.0184	39.94	191.29	39.94	191.29	.002
102000	360	51	231.34	-67	10.7619	16.2065	40.99	192.54	40.99	192.54	.002
103000	370	51	232.57	-67	10.2956	15.4229	41.62	194.11	41.62	194.11	.001
104000	380	51	233.85	-67	9.8506	14.6753	42.14	195.74	42.14	195.74	.000
105000	390	51	234.77	-68	9.4279	13.9902	42.24	196.62	42.24	196.62	.000
106000	400	51	235.61	-68	9.0240	13.3431	42.21	197.69	42.21	197.69	.001
107000	410	50	236.32	-68	8.6301	12.7354	42.48	198.83	42.48	198.83	.001
108000	420	50	236.94	-69	8.2715	12.1592	43.27	199.74	43.27	199.74	.002
109000	430	49	237.62	-71	7.9207	11.6126	44.94	200.53	44.94	200.53	.002
110000	440	49	238.23	-71	7.5856	11.0931	46.52	201.30	46.52	201.30	.001
111000	450	50	238.63	-70	7.2654	10.6066	49.24	201.81	49.24	201.81	.002
112000	460	51	238.50	-73	6.9589	10.1448	52.30	201.66	52.30	201.66	.002
113000	470	51	238.14	-74	6.6651	9.7405	54.74	201.22	54.74	201.22	.002
114000	480	51	237.75	-75	6.3833	9.3435	56.27	200.70	56.27	200.70	.002
115000	490	51	237.36	-78	6.1131	8.9723	57.64	200.20	57.64	200.20	.001
116000	500	51	237.31	-80	5.8540	8.6290	57.24	200.14	57.24	200.14	.000
117000	510	51	237.60	-81	5.6061	8.2109	57.32	200.51	57.32	200.51	.001
118000	520	51	238.09	-82	5.3601	7.8562	56.84	201.12	56.84	201.12	.001
119000	530	53	238.44	-84	5.1425	7.5062	55.27	201.04	55.27	201.04	.002
120000	540	53	239.31	-85	4.9262	7.1715	54.92	202.41	54.92	202.41	.001

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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14500	72	30	247.00	-3.00	333.00	347.00	24.20	611.30	0.17
14600	74	30	246.00	-4.00	324.00	340.00	24.20	611.30	0.17
14700	76	30	244.00	-4.00	312.00	340.00	24.20	611.30	0.17
14800	78	30	243.00	-4.00	300.00	340.00	24.20	611.30	0.17
14900	80	30	242.00	-4.00	288.00	340.00	24.20	611.30	0.17
15000	82	30	240.00	-4.00	276.00	340.00	24.20	611.30	0.17
15100	84	30	238.00	-4.00	264.00	340.00	24.20	611.30	0.17
15200	86	30	236.00	-4.00	252.00	340.00	24.20	611.30	0.17
15300	88	30	234.00	-4.00	240.00	340.00	24.20	611.30	0.17
15400	90	30	232.00	-4.00	228.00	340.00	24.20	611.30	0.17
15500	92	30	230.00	-4.00	216.00	340.00	24.20	611.30	0.17
15600	94	30	228.00	-4.00	204.00	340.00	24.20	611.30	0.17
15700	96	30	226.00	-4.00	192.00	340.00	24.20	611.30	0.17
15800	98	30	224.00	-4.00	180.00	340.00	24.20	611.30	0.17
15900	100	30	222.00	-4.00	168.00	340.00	24.20	611.30	0.17

MAXIMUM ALTITUDE 100001 GEOMET

[illegible]

AD-A163 634

IRIG STANDARDS FOR RANGE METEOROLOGICAL DATA REDUCTION
PART 2 ROCKETSONDE(U) RANGE COMMANDERS COUNCIL WHITE
SANDS MISSILE RANGE NM INTER-R. DEC 85

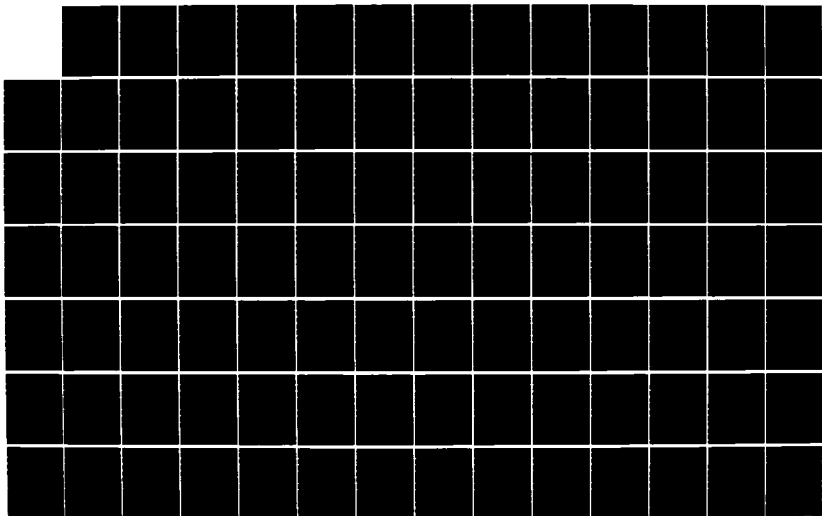
2/5

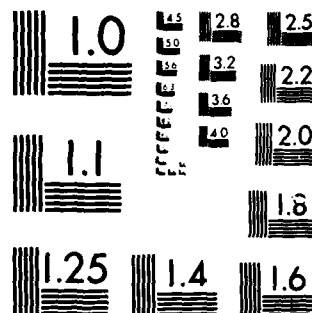
UNCLASSIFIED

IRIG-STANDARD-352-85-

F/G 4/1

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

ROCK 3

ATTACHMENT 8
BREAKDOWN OF 46-CHARACTER DATA

A-101

ROCK 3

DATA FORMAT

COMPUTER OCTAL SEMI-RAW TTY OUTPUT

(38/46 CHARACTER)

SOM Line: JJ ↓ < ≡ ↓ or DD ↓ < ≡ ↓

Description

Char. No. Char. or Range Content

1 Line Feed
2 + Figure Shift
3 + Figure Shift
4 (0-9) Vehicle ID
5 (0-9) Station ID
6 (0-9) Station ID
7 (0-9) Radar ID
8 (0 or 2) Validity ID
9 (0-2) Hrs (tens)
10 (0-9) Hrs (units)
11 (0-5) Min (tens)
12 (0-9) Min (units)
13 (0-5) Sec (tens)
14 (0-9) Sec (units)
15 (0-7) Az 21, 20, 19
16 (0-7) Az 18, 17, 16
17 (0-7) Az 15, 14, 13
18 (0-7) Az 12, 11, 10
19 (0-7) Az 9, 8, 7
20 (0-7) Az 6, 5, 4
21 (0-7) Az 3, 2, 1
22 (0-7) El 21, 20, 19
23 (0-7) El 18, 17, 16
24 (0-7) El 15, 14, 13
25 (0-7) El 12, 11, 10
26 (0-7) El 9, 8, 7
27 (0-7) El 6, 5, 4
28 (0-7) El 3, 2, 1
29 (0-7) Rng 27, 26, 25
30 (0-7) Rng 24, 23, 22
31 (0-7) Rng 21, 20, 19
32 (0-7) Rng 18, 17, 16
33 (0-7) Rng 15, 14, 13
34 (0-7) Rng 12, 11, 10
35 (0-7) Rng 9, 8, 7
36 (0-7) Rng 6, 5, 4
37 (0-7) Rng 3, 2, 1
38 < Carriage return for end of 38 character data
38 (0-3) 46 char data day of year (100)
39 (0-3) 46 char data day of year (10)
40 (0-9) 46 char data day of year (1)
41 (0-9) 46 char data catalog number (1000)
42 (0-9) 46 char data catalog number (100)
43 (0-9) 46 char data catalog number (10)
44 (0-9) 46 char data catalog number (1)
45 (0-9) SPACE
46 < Carriage return for end of 46 character data

Vehicle ID		
Beacon		Skin
0		&
1		-
2		
3		
4		.
5		\$
6		
7)
8		Test Data
9		Last Point

Station ID		Radar ID		No. Char.
01	BDA 67.18	4	TPQ-18	46
02	BDA 67.16	5	FPS-16M	46
08	CRO --	3	FPQ-6	46
12	HAW --	5	FPS-16M	38/46
21	PAT 0.18	3	FPQ-6	38/46
41	GBI 3.13	-	FPQ-13	None
51	GTK 7.18	4	TPQ-18	38/46
63	REDSTONE	5	FPS-16M	38
71	MLA 19.18	4	TPQ-18	38/46
75	ACN 12.16	0	FPS-16	38/46
91	ANT 91.18	3	FPQ-6	38/46
98	CNV 1.16	-	FPS-16	None

EOM Line: ≡ * / ↓

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ATTACHMENT 9

DESCRIPTION OF TEMPERATURE CORRECTION TECHNIQUE

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(This attachment was extracted from *Federal Meteorological Handbook 10*)

Description of corrections applied to observed Rocketsonde Temperature

Temperature Corrections for Datasonde Instrument

The Datasonde instrument employs a 10-mil bead thermistor, mounted on a loop of silverized mylar, commonly referred to as the loop mount. The general procedures for applying temperature corrections to film mounted thermistors, as described by Henry (Bibliography Ref. 3) have been expanded and adapted to the specific configuration of the loop mounted thermistor as used in the Datasonde instrument. This work has been done by Krumins and Lyons (Bibliography Ref. 4), and others, and has been adopted as the U.S. standard correction technique. The corrections developed for application to the loop mounted thermistor include acceptable values for incoming radiation heating corrections.

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The true atmospheric temperature, T_{atm} , is equal to the observed thermistor temperature, T_t , plus certain correction values described by the following terms: (some rearrangement of the elements of each term has been made from the similar terms used for the Arcasonde instrument and the elements for the incoming radiation corrections have been added to the fourth term.):

Aerodynamic heating term,

$$K_1 = - \left[\frac{A_t h_t r_t + w_f A_f h_f r_f}{A_t h_t + w_f A_f h_f} \right] \frac{V^2}{2c_p}$$

Time lag term,

$$K_2 = + \left[\frac{c_t m_t + w_f c_f m_f}{A_t h_t + w_f A_f h_f} \right] \frac{dT_t}{dt}$$

Radiation heat loss, term,

$$K_3 = + \left[\frac{A_t \epsilon_{lt} + w_f A_f \epsilon_{lf}}{A_t h_t + w_f A_f h_f} \right] \sigma T_t^4$$

Incoming radiation and electric heating term,

$$K_4 = - \frac{\alpha_{st} G_{st}}{A_t h_t + w_f A_f h_f} J$$

$$- \frac{w_f \alpha_{sf} G_{sf}}{A_t h_t + w_f A_f h_f} J - \left[\frac{\alpha_{st} G_{st}}{A_t h_t + w_f A_f h_f} + \frac{w_f \alpha_{sf} G_{sf}}{A_t h_t + w_f A_f h_f} \right] Alb. J$$

$$- \left[\frac{\alpha_{lt} G_{lt} + w_f \alpha_{lf} G_{lf}}{A_t h_t + w_f A_f h_f} \right] \sigma T_{eff}^4 - \frac{W_t}{A_t h_t + w_f A_f h_f}$$

The four correction terms applied to the observed thermistor temperature can be simply identified in a correction expression as follows:

$$T_{atm} = T_t - (K_1(Z)V^2) + [K_2(Z)\left(\frac{dT_t}{dt}\right)] + (K_3(Z)T_t^4) - (K_4(Z))$$

The values of $K_1(Z)$, $K_2(Z)$, $K_3(Z)$ and $K_4(Z)$ are shown in table 1.b. and the values of T_t , V^2 , $\frac{dT_t}{dt}$ and T_t^4 versus altitude, (Z), are obtained from each individual sounding.

List of Symbols and Values

The following symbols have been used in the foregoing expressions. The values of some of the constants and also several of the mount/thermistor dimensions which have been used in the computation of data for tables 1.a and 1.b are shown. Where the values differ for the flat plate and the loop mounted thermistor, the system for which the value is applicable is indicated by the letters F and L, respectively.

Symbol	Definition	Value
α	speed of sound	
A	aerodynamic heating term	
A_f	surface area of film	3.944 cm^2
A_t	surface area of thermistor	$2.92 \times 10^{-3} \text{ cm}^2$
A_{lb}	albedo	35 percent assumed
B	time lag term	
c_f	specific heat of film	$0.2 \text{ cal gm}^{-1} (\text{°K})^{-1}$
c_p	specific heat of air at constant pressure	$0.24 \text{ cal gm}^{-1} (\text{°K})^{-1}$
C	<i>ohmic and rf heating term</i>	
d	diameter of bead	$2.54 \times 10^{-2} \text{ cm}$
D	long wave emission term	
G_{lf}	area of film multiplied by a shape factor subject to long-wave (terrestrial) radiation	$3.944 \times 0.5 \text{ cm}^2$
G_{lt}	area of thermistor multiplied by a shape factor subject to long-wave (terrestrial) radiation	$2.923 \times 10^{-3} \times 0.5 \text{ cm}^2$
G_{sf}	<i>area of film multiplied by a shape factor supplied to short-wave (solar) radiation</i>	$3.944 \times 0.25 \text{ cm}^2$
G_{st}	area of thermistor multiplied by a shape factor subject to short-wave (solar) radiation	$5.09 \times 10^{-4} \times 0.25 \text{ cm}^2$
h_f	convective heat-transfer coefficient for film	See Bibl. 4
h_t	convective heat-transfer coefficient for thermistor	See Bibl. 4
$(h_f)_{\text{local}}$	local convective heat-transfer coefficient for film	See Bibl. 4

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Symbol	Definition	Value
J	solar constant	
k	conductivity of lead wires	$7.4 \times 10^{-2} \text{ cal cm}^{-1} \text{ sec}^{-1} (\text{°K})^{-1}$
K ₁	dynamic heating correction term	
K ₂	lag correction term	
K ₃	radiation loss correction term	
K ₄	radiation and electrical heating correction term	
M	Mach number	
m _f	mass of film	$1.4 \times 10^{-2} \text{ gm}$
V	ventilation velocity of sensor system, m sec ⁻¹	
w _f	weighting factor	See Bibl. 4
W _t	electrical heating of thermistor due to measuring current and radio-frequency radiation	$9.56 \times 10^{-7} \text{ cal sec}^{-1}$
x	length of lead wires	0.33 cm
Z	altitude meters	
α	absorptivity	
α _{lf}	absorptivity of long-wave (terrestrial) radiation of film	0.1
α _{lt}	absorptivity of long-wave (terrestrial) radiation of thermistor	0.1
α _{sf}	absorptivity of short-wave (solar) radiation of film	0.18
α _{st}	absorptivity of short-wave (solar) radiation of thermistor	0.12
β	cross sectional area of lead wires	$5.07 \times 10^{-6} \text{ cm}^2$
ε _{lf}	emissivity of film	0.18
ε _{lt}	emissivity of thermistor	0.2
γ	angle of elevation of sun from horizontal	See Bibl. 4
μ	viscosity	

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Symbol	Definition	Value
ρ	density	
ρ_f	density of film	
σ	Stefan-Boltzman constant	$1.38 \times 10^{-12} \text{ cal cm}^{-2} \text{ sec}^{-1} (\text{°K})^{-4}$
m_t	mass of thermistor	See Bibl. 4
N_s	Nusselt number	See Bibl. 4
P_r	Prandlt number	See Bibl. 4
r_f	recovery factor for film	0.85
r_t	recovery factor for thermistor	See Bibl. 4
R_d	Reynolds number based on diameter	See Bibl. 4
R_l	Reynolds number based on length	See Bibl. 4
R_s	Reynolds number based on length along the film	See Bibl. 4
s	distance along the film from stagnation point	See Bibl. 4
S_t	Stanton number	See Bibl. 4
T_{eff}	effective radiation temperature of atmosphere	See Bibl. 4
T_f	temperature of film	
T_t	temperature of thermistor, degrees K	
T_{atm}	temperature of atmosphere corrected, degrees K	
t	time, seconds	
t_f	thickness of film	
u	local velocity	

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TABLE 1

Table of values of K_1 , K_2 , K_3 , and K_4 versus altitude for the 10-mil bean thermometer using a loop mount.

Z (m)	K_1 $\frac{\text{sec}^2 \text{ } ^\circ\text{K}}{\text{m}^2}$	K_2 (sec)	K_3 $\frac{1}{^\circ\text{K}^3}$	K_4 ($^\circ\text{K}$)	
				Day	Night
70 x 10 ³	4.65 x 10 ⁻⁴	12.77	18.51 x 10 ⁻¹⁰	23.2	7.56
69	4.65	10.60	14.63	18.4	6.04
68	4.64	8.92	11.83	15.0	4.93
67	4.64	7.70	9.80	12.5	4.13
66	4.63	6.69	8.18	10.4	3.48
65	4.62	5.93	6.98	8.94	3.00
64	4.61	5.27	5.98	7.70	2.59
63	4.59	4.72	5.17	6.69	2.26
62	4.57	4.27	4.63	5.87	2.00
61	4.55	3.84	3.93	5.13	1.75
60	4.52	3.51	3.49	4.57	1.57
59	4.50	3.23	3.12	4.10	1.41
58	4.48	2.95	2.78	3.66	1.27
57	4.46	2.72	2.49	3.29	1.15
56	4.44	2.51	2.24	2.98	1.04
55	4.43	2.342	2.05	2.73	0.956
54	4.42	2.148	1.87	2.51	0.880
53	4.41	2.053	1.74	2.33	0.820
52	4.40	1.935	1.62	2.17	0.766
51	4.40	1.828	1.51	2.03	0.718
50	4.39	1.728	1.41	1.90	0.673
49	4.39	1.627	1.31	1.77	0.629
48	4.39	1.545	1.23	1.67	0.592
47	4.39	1.469	1.16	1.57	0.559
46	4.40	1.393	1.09	1.48	0.528
45	4.41	1.330	1.03	1.40	0.500
44	4.41	1.271	9.76 x 10 ⁻¹¹	1.33	0.476
43	4.42	1.212	9.24	1.26	0.452
42	4.42	1.160	8.79	1.20	0.430
41	4.43	1.111	8.35	1.14	0.410
40	4.43	1.065	7.95	1.09	0.392
39	4.44	1.019	7.53	1.03	0.372
38	4.44	0.978	7.18	0.986	0.355
37	4.45	0.940	6.85	0.943	0.341
36	4.45	0.903	6.52	0.897	0.323
35 x 10 ³	4.46 x 10 ⁻⁴	0.868	6.22 x 10 ⁻¹¹	0.858	0.311
34	4.46	0.837	5.96	0.822	0.298
33	4.47	0.804	5.68	0.785	0.285
32	4.47	0.776	5.44	0.753	0.274
31	4.48	0.749	5.22	0.722	0.263
30	4.49	0.724	5.00	0.694	0.253
29	4.49	0.700	4.79	0.666	0.243

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TABLE 1 (Continued)

Z (m)	K ₁ $\frac{\text{sec}^2 \text{°K}}{\text{m}^2}$	K ₂ (sec)	K ₃ $\frac{1}{\text{°K}^3}$	K ₄ (°K)	
				Day	Night
28	4.50	0.677	4.60	0.640	0.235
27	4.50	0.656	4.42	0.615	0.225
26	4.51	0.635	4.25	0.593	0.218
25	4.52	0.616	4.09	0.572	0.210
24	4.52	0.597	3.94	0.551	0.203
23	4.52	0.580	3.81	0.533	0.197
22	4.53	0.565	3.69	0.518	0.191
21	4.54	0.550	3.58	0.502	0.185
20	4.55	0.635	3.47	0.487	0.180

$$T_{\text{atm}} = T_t - (K_1(Z)V^2) + \left[K_2(Z) \left(\frac{dT_t}{dt} \right) \right] + (K_3(Z)T_t^4) - (K_4(Z))$$

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ATTACHMENT 10

**SAMPLE COPY OF ROCOB DATA
(SEE ATTACHMENT 5 FOR INPUT DATA)**

ROCK 3

2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575
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ROCK 3

**ATTACHMENT 11
BREAKDOWN OF ROCOB CODE**

ROCK 3

ROCKETSONDE MESSAGE CODE

SECTION A - INTRODUCTION

1.1 A ROCOB report or a bulletin of ROCOB reports from a land rocketsonde station is identified by $M_i M_i M_j M_j = RRXX$. The identifier for ROCOB SHIP is SSXX. (The name ROCOB or ROCOB SHIP shall not be included in the report.)

1.2 The code form is divided into three sections as follows:

SECTION 1 - Identification data

SECTION 2 - Data for specified geometric altitudes

SECTION 3 - Data for isobaric surfaces (optional)
(Sections 2 and 3 cannot be transmitted as a separate report.)

SECTION B - MESSAGE FORMAT

1.1 FM39.F ROCOB - Upper-level temperature and wind (possibly air density) report from land rocketsonde station.

SECTION 1	$M_i M_i M_j M_j$	YYCG _g	MMJJJ	IIiii	$a_1 e_1 \epsilon_1 c_1 m_1$	$r_1 e_1 e_1 c_1 m_1$
SECTION 2	HHZ _T TT	ddfff			(9d _p P ₁ P ₁ P ₁)	
	HHZ _T TT	ddfff			(9d _p P ₁ P ₁ P ₁)	
	
SECTION 3	11Z _T T ₁ T ₁	P ₁ P ₁ h ₁ h ₁ h ₁		ddfff		
	
	11Z _T T _n T _n	P _n P _n h _n h _n h _n		ddfff _n		
	22Z _T T ₁ T ₁	P ₁ P ₁ h ₁ h ₁ h ₁		ddfff ₁		
	
	22Z _T T _n T _n	P _n P _n h _n h _n h _n		ddfff _n		
	33...	
	44...	
	etc.					

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SECTION C - DEFINITIONS

1.1 Symbolic form table for land stations

$M_i M_j M_k M_l$	= RRXX - ROCOB report from a land station
YY	= Day of the month (GMT) on which the observation was taken.
GG _g	= Time of launch in hours and nearest tens of minutes GMT
MM	= Month of year (01 = Jan, 12 = Dec. etc.)
JJJ	= Year (980 = 1980, 981 = 1981, etc.)
IIiii	= International Index Number of the observing station (II = Block Nbr and iii = Station Nbr, both given in H.C. Pub. No. 119.)
a ₁	= Reason for no report and ground equipment employed (Code Table 1).
e _T e _T	= Type of thermodynamic sensing equipment (Code Table 2).
c _T	= Thermodynamic correction technique (Code Table 3).
m _r	= Method of reducing data in temperature or wind group (Code Table 4).
r _m	= Type of rocket motor (Code Table 5).
e _w e _w	= Type of wind sensing equipment (Code Table 6).
e _w	= Wind correction technique (Code Table 3).
HH	= Altitude, in kilometers, of the level for which data are reported.
Z _T	= Character of the temperature reported by TT (Code Table 7).
TT	= Air temperature in whole degrees Celsius at the altitude given by HH. (For a temperature of -570, the coding is TT=57 and Z _T =5.) When temperature is missing, two solidi (//) are reported for TT.
dd	= True direction, in tens of degrees, from which the wind is blowing at the altitude given by HH (Code Table 8). (See note below fff.)
fff	= Windspeeds are preferred in meters/sec at the altitude given by HH. If windspeeds are given in knots, 50 will be added to YY.

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NOTE: (1) When wind direction or speed are missing, use solidi for dfff as appropriate.

(2) The thickness of the layer through which wind direction and speed are determined shall be 2 km for both mandatory and significant levels; i.e., 1 km on each side of the altitude reported.

9 = Indicator figure for the density group, $9d_{P_1 P_1 P_1}$.

d_p = Decimal point locator. The number of places to the left of the third significant figure. The decimal point must be so placed as to obtain the actual density in g/m^3 by $P_1 P_1 P_1$.

NOTE: The third significant figure is always included in the value reported for symbol d_p .

EXAMPLE:

Assume $120 g/m^3$, the group is coded 90120 (i.e., $d_p = 0$).

Assume $1.20 g/m^3$, the group is coded 92120 (i.e., $d_p = 2$).

Assume $0.281 g/m^3$, the group is coded 93281 (i.e., $d_p = 3$).

Assume $0.0788 g/m^3$, the group is coded 94788 (i.e., $d_p = 4$).

$P_1 P_1 P_1$ = Density in gm/m^3 rounded to three significant figures at the altitude given by HH.

11 = Indicator figures - Standard isobaric surface data follow;

temperature ($Z_{T_1 T_1} \dots Z_{T_n T_n}$) is reported in the same manner as in section 2, pressure ($P_1 P_1 \dots P_n P_n$) is reported in whole millibars, altitude ($h_1 h_1 h_1 \dots h_n h_n h_n$) is reported in geopotential hectometers.

22 = Indicator figures - Standard isobaric surface data follow; temperature is reported in the same manner as in section 2, pressure is reported in tenths of a millibar and altitude is reported in geopotential hectometers.

33 = Indicator used for reporting pressure in hundredths of a millibar and altitude in geopotential hectometers.

44 = Indicator used for reporting pressure in thousandths of a millibar and altitude in geopotential hectometers.

ROCK 3

- 55 = Indicator used for reporting pressure in ten-thousandths of a millibar and altitude in geopotential hectometers.
- 66 = Indicator used for reporting pressure in hundred-thousandths of a millibar and altitude in geopotential kilometers.
- $d_1 d_1$ = Wind direction in tens of degrees (Code Table 8) at the reported isobaric surfaces.
- $f_1 f_1 f_1$ = Windspeed in meters/sec at the reported isobaric surfaces.

ROCK 3

ATTACHMENT 12

TABLE OF THE LOGS OF MANDATORY PRESSURE LEVELS

ROCK 3

LOG OF MANDATORY PRESSURE LEVELS

LEVEL	50 MB	30 MB	20 MB	10 MB	7 MB
LOG	1.69897	1.47712	1.30102	1.0	0.84509
LEVEL	5 MB	3 MB	2 MB	1 MB	
LOG	0.69897	0.47712	0.30102	0.0	
LEVEL	0.7 MB	0.5 MB	0.4 MB	0.3 MB	
LOG	-0.15490	-0.30102	-0.39794	-0.52287	
LEVEL	0.2 MB	0.1 MB			
LOG	-0.699897	-1.			
LEVEL	0.07 MB	0.05 MB	0.03 MB	0.02 MB	
LOG	-1.15490	-1.30102	-1.52287	-1.69897	
LEVEL	0.01 MB				
LOG	-2.0				
LEVEL	0.007 MB	0.005 MB	0.003 MB	0.002 MB	
LOG	-2.15490	-2.30102	-2.52287	-2.69897	
LEVEL	0.001 MB				
LOG	-3.0				
LEVEL	0.0007 MB	0.0005 MB	0.0003 MB	0.0002 MB	
LOG	-3.15490	-3.30102	-3.52287	-3.69987	
LEVEL	0.0001 MB				
LOG	-4.0				
LEVEL	0.00007 MB	0.00005 MB	0.00003 MB	0.00002 MB	
LOG	-4.15490	-4.30102	-4.52287	-4.69897	
LEVEL	0.00001 MB				
LOG	-5.0				

ROCK 3

ATTACHMENT 13

**SAMPLE COPY OF HIGH-ALTITUDE METEOROLOGICAL DATA
(SEE ATTACHMENT 5 FOR INPUT DATA)**

1300, 7510, 1300,
Cape General, 1300,
1300, 7510, 1300

[illegible]

Category	Item	Value	Unit	Notes
Electronics	Smartphone	1200	USD	Latest model
	Laptop	800	USD	Business class
	Tablet	300	USD	10-inch
	Smartwatch	150	USD	Health tracking
	Wireless Earbuds	80	USD	Noise cancelling
	Smart TV	500	USD	55-inch
	Gaming Console	250	USD	Next-gen
	Smart Home Hub	40	USD	Voice control
	Security Camera	60	USD	1080p
	Smart Lock	120	USD	App control
Furniture	Sofa	1500	USD	L-shaped
	Bed	1200	USD	Queen size
	Dining Table	400	USD	4-seater
	Chair	80	USD	Ergonomic
	Desk	200	USD	Adjustable
	Shelf	50	USD	Floating
	Armchair	180	USD	Reclining
	Ottoman	100	USD	Storage
	Bedside Table	60	USD	Nightstand
	TV Stand	150	USD	Media console
Clothing	Jeans	50	USD	Denim
	Shirt	30	USD	Cotton
	Coat	120	USD	Wool
	Scarf	20	USD	Knit
	Gloves	10	USD	Leather
	Socks	5	USD	Cotton
	Underwear	15	USD	Boxer
	Shoes	80	USD	Leather
	Hat	25	USD	Wool
	Bag	40	USD	Canvas
Food & Beverage	Apples	10	USD	Organic
	Bananas	5	USD	Local
	Oranges	8	USD	Juicy
	Apples	10	USD	Organic
	Bananas	5	USD	Local
	Oranges	8	USD	Juicy
	Apples	10	USD	Organic
	Bananas	5	USD	Local
	Oranges	8	USD	Juicy
	Apples	10	USD	Organic

ROCK 3

ATTACHMENT 14

**SAMPLE COPY OF CARD OUTPUT
(SEE ATTACHMENT 5 FOR INPUT DATA)**

ROCK 3

70067
70068
70069
70070

17-48 [No] 42615

[illegible]

TEST NUMBER 53-2
TAPE CONVEYORAL AFF. FL.
13067 7 AUG 1984

011-1111 1111 1111

[illegible]

[illegible]

A-140

[illegible]

A-142

[illegible]

ROCK 3

ATTACHMENT 15

SAMPLE COPY OF CO-RAWINSONDE 250-METER INPUT

[illegible]

[illegible]

ROCK 3

**ATTACHMENT 16
PROGRAM LISTING**

```

1 1 PROGRAM ROCK(INPUT=05,OUTPUT=04,TAPE1=512,TAPE2=512,TAPE3=045,
2 C TAPE4=045,TAPE7=045,TAPE10=045,TAPE13=045,TAPE16=045,
3 C TAPE19=045,TAPE22=045,TAPE25=045,TAPE28=045,TAPE31=045,
4 C TAPE34=045,TAPE37=045,TAPE40=045,TAPE43=045,TAPE46=045,
5 C TAPE49=045,TAPE52=045,TAPE55=045,TAPE58=045,TAPE61=045,
6 C TAPE64=045,TAPE67=045,TAPE70=045,TAPE73=045,TAPE76=045,
7 C TAPE79=045,TAPE82=045,TAPE85=045,TAPE88=045,TAPE91=045,
8 C TAPE94=045,TAPE97=045,TAPE100=045,TAPE103=045,TAPE106=045,
9 C TAPE109=045,TAPE112=045,TAPE115=045,TAPE118=045,TAPE121=045,
10 C TAPE124=045,TAPE127=045,TAPE130=045,TAPE133=045,TAPE136=045,
11 C TAPE139=045,TAPE142=045,TAPE145=045,TAPE148=045,TAPE151=045,
12 C TAPE154=045,TAPE157=045,TAPE160=045,TAPE163=045,TAPE166=045,
13 C TAPE169=045,TAPE172=045,TAPE175=045,TAPE178=045,TAPE181=045,
14 C TAPE184=045,TAPE187=045,TAPE190=045,TAPE193=045,TAPE196=045,
15 C TAPE199=045,TAPE202=045,TAPE205=045,TAPE208=045,TAPE211=045,
16 C TAPE214=045,TAPE217=045,TAPE220=045,TAPE223=045,TAPE226=045,
17 C TAPE229=045,TAPE232=045,TAPE235=045,TAPE238=045,TAPE241=045,
18 C TAPE244=045,TAPE247=045,TAPE250=045,TAPE253=045,TAPE256=045,
19 C TAPE259=045,TAPE262=045,TAPE265=045,TAPE268=045,TAPE271=045,
20 C TAPE274=045,TAPE277=045,TAPE280=045,TAPE283=045,TAPE286=045,
21 C TAPE289=045,TAPE292=045,TAPE295=045,TAPE298=045,TAPE301=045,
22 C TAPE304=045,TAPE307=045,TAPE310=045,TAPE313=045,TAPE316=045,
23 C TAPE319=045,TAPE322=045,TAPE325=045,TAPE328=045,TAPE331=045,
24 C TAPE334=045,TAPE337=045,TAPE340=045,TAPE343=045,TAPE346=045,
25 C TAPE349=045,TAPE352=045,TAPE355=045,TAPE358=045,TAPE361=045,
26 C TAPE364=045,TAPE367=045,TAPE370=045,TAPE373=045,TAPE376=045,
27 C TAPE379=045,TAPE382=045,TAPE385=045,TAPE388=045,TAPE391=045,
28 C TAPE394=045,TAPE397=045,TAPE400=045,TAPE403=045,TAPE406=045,
29 C TAPE409=045,TAPE412=045,TAPE415=045,TAPE418=045,TAPE421=045,
30 C TAPE424=045,TAPE427=045,TAPE430=045,TAPE433=045,TAPE436=045,
31 C TAPE439=045,TAPE442=045,TAPE445=045,TAPE448=045,TAPE451=045,
32 C TAPE454=045,TAPE457=045,TAPE460=045,TAPE463=045,TAPE466=045,
33 C TAPE469=045,TAPE472=045,TAPE475=045,TAPE478=045,TAPE481=045,
34 C TAPE484=045,TAPE487=045,TAPE490=045,TAPE493=045,TAPE496=045,
35 C TAPE499=045,TAPE502=045,TAPE505=045,TAPE508=045,TAPE511=045,
36 C TAPE514=045,TAPE517=045,TAPE520=045,TAPE523=045,TAPE526=045,
37 C TAPE529=045,TAPE532=045,TAPE535=045,TAPE538=045,TAPE541=045,
38 C TAPE544=045,TAPE547=045,TAPE550=045,TAPE553=045,TAPE556=045,
39 C TAPE559=045,TAPE562=045,TAPE565=045,TAPE568=045,TAPE571=045,
40 C TAPE574=045,TAPE577=045,TAPE580=045,TAPE583=045,TAPE586=045,
41 C TAPE589=045,TAPE592=045,TAPE595=045,TAPE598=045,TAPE601=045,
42 C TAPE604=045,TAPE607=045,TAPE610=045,TAPE613=045,TAPE616=045,
43 C TAPE619=045,TAPE622=045,TAPE625=045,TAPE628=045,TAPE631=045,
44 C TAPE634=045,TAPE637=045,TAPE640=045,TAPE643=045,TAPE646=045,
45 C TAPE649=045,TAPE652=045,TAPE655=045,TAPE658=045,TAPE661=045,
46 C TAPE664=045,TAPE667=045,TAPE670=045,TAPE673=045,TAPE676=045,
47 C TAPE679=045,TAPE682=045,TAPE685=045,TAPE688=045,TAPE691=045,
48 C TAPE694=045,TAPE697=045,TAPE700=045,TAPE703=045,TAPE706=045,
49 C TAPE709=045,TAPE712=045,TAPE715=045,TAPE718=045,TAPE721=045,
50 C TAPE724=045,TAPE727=045,TAPE730=045,TAPE733=045,TAPE736=045,
51 C TAPE739=045,TAPE742=045,TAPE745=045,TAPE748=045,TAPE751=045,
52 C TAPE754=045,TAPE757=045,TAPE760=045,TAPE763=045,TAPE766=045,
53 C TAPE769=045,TAPE772=045,TAPE775=045,TAPE778=045,TAPE781=045,
54 C TAPE784=045,TAPE787=045,TAPE790=045,TAPE793=045,TAPE796=045,
55 C TAPE799=045,TAPE802=045,TAPE805=045,TAPE808=045,TAPE811=045,
56 C TAPE814=045,TAPE817=045,TAPE820=045,TAPE823=045,TAPE826=045,
57 C TAPE829=045,TAPE832=045,TAPE835=045,TAPE838=045,TAPE841=045,
58 C TAPE844=045,TAPE847=045,TAPE850=045,TAPE853=045,TAPE856=045,
59 C TAPE859=045,TAPE862=045,TAPE865=045,TAPE868=045,TAPE871=045,
60 C TAPE874=045,TAPE877=045,TAPE880=045,TAPE883=045,TAPE886=045,
61 C TAPE889=045,TAPE892=045,TAPE895=045,TAPE898=045,TAPE901=045,
62 C TAPE904=045,TAPE907=045,TAPE910=045,TAPE913=045,TAPE916=045,
63 C TAPE919=045,TAPE922=045,TAPE925=045,TAPE928=045,TAPE931=045,
64 C TAPE934=045,TAPE937=045,TAPE940=045,TAPE943=045,TAPE946=045,
65 C TAPE949=045,TAPE952=045,TAPE955=045,TAPE958=045,TAPE961=045,
66 C TAPE964=045,TAPE967=045,TAPE970=045,TAPE973=045,TAPE976=045,
67 C TAPE979=045,TAPE982=045,TAPE985=045,TAPE988=045,TAPE991=045,
68 C TAPE994=045,TAPE997=045,TAPE1000=045,TAPE1003=045,TAPE1006=045,
69 C TAPE1009=045,TAPE1012=045,TAPE1015=045,TAPE1018=045,TAPE1021=045,
70 C TAPE1024=045,TAPE1027=045,TAPE1030=045,TAPE1033=045,TAPE1036=045,
71 C TAPE1039=045,TAPE1042=045,TAPE1045=045,TAPE1048=045,TAPE1051=045,
72 C TAPE1054=045,TAPE1057=045,TAPE1060=045,TAPE1063=045,TAPE1066=045,
73 C TAPE1069=045,TAPE1072=045,TAPE1075=045,TAPE1078=045,TAPE1081=045,
74 C TAPE1084=045,TAPE1087=045,TAPE1090=045,TAPE1093=045,TAPE1096=045,
75 C TAPE1099=045,TAPE1102=045,TAPE1105=045,TAPE1108=045,TAPE1111=045,
76 C TAPE1114=045,TAPE1117=045,TAPE1120=045,TAPE1123=045,TAPE1126=045,
77 C
```



```

115 CALL INTPTMP
116 CALL MOUNT(MAXALT)
117 CALL NABTIC(NIGHT)
118 CALL COMBOSW
119 CALL TACHM
120 CALL DEFSCOM
121 CALL ONKILQ(MAXALTS)
122 CALL PLTCH
123 CALL PUTINT(MAXALTS)
124 CALL STERRM
125 CALL POCOR
126 C-----
127 ENDFILE 61
128 CALL ENDRUN
129 STOP
130 C-----
131 FORMAT(15)
132 FORMAT(12,313,15,212,25,311,12,11)
133 FORMAT(3A10)
134 FORMAT('IS THIS A NIGHT RUN ? YES/NO')
135 FORMAT(1)
136 FORMAT('IS THIS A NATTY RUN ? YES/NO')
137 FORMAT(1X)
138 C-----
139 END

```

```

1 SUBROUTINE SI=0(A,B,P)
2  DIMENSION A(1), B(1)
3  JJ = -N
4  DO 65 J = 1,N
5  JY = J + 1
6  JJ = JJ + N + 1
7  RICA = 0
8  IF (JJ - J)
9  DO 30 I = J, N
10  JJ = JJ + I
11  IF (ABS(BIGA).GE.ABS(A(IJ))) GOTO 30
12  RICA = A(IJ)
13  IMAX = I
14 30 CONTINUE
15  IF (ABS(BIGA).EQ.0.0) RETURN
16  I1 = J + N*(J-2)
17  IT = IMAX-J
18  DO 50 K = J,N
19  I1 = I1 + N
20  I2 = I1 + IT
21  SAVE = A(I1)
22  A(I1) = A(I2)
23  A(I2) = SAVE
24 50 A(I1) = A(I1)/BIGA
25  SAVE = B(IMAX)
26  R(IMAX) = R(J)
27  B(J) = SAVE/BIGA
28  IF (J.EQ.N) GOTO 70
29  IOS = N*(J-1)
30  DO 65 IX = JY,N
31  IXJ = IOS + IX
32  IT = J - IX
33  DO 60 JX = JY,N
34  IXJX = N*(JX-1) + IX
35  JJX = IXJX + IT
36  A(IXJX) = A(IXJX) - (A(IXJ)*A(JXJ))
37  B(IX) = B(IX) - (B(J)*A(IXJ))
38 70 NY = N-1
39  IT = N*N
40  DO 50 J = 1,NY
41  IA = IT-J
42  IB = N-J
43  IC = N
44  DO 40 K = 1,J
45  R(IB) = R(IB)-A(IA)*R(IC)
46  JA = JA -N
47  IC = IC-1
48  RETURN
49  END

```


1

PAGE

54/00/14. 14.29.44.

NY 100-4652

79176 72700

5J469974NC 5012117

```

1 SUBROUTINE OUTPUT(AS,YS,YOUT,P,FS)
2 COMMON XVALT,YNB,PLT,HL,PL,CORF1,CORF2,HSP,XIP,YIP,ITEST,NM,NOC,
3 C NV,NT,NO,NS,XJ,IA,IB,IC,IO,NOTEMP,WPS,IN(OH),INX(ILH),IDNCK
4 COMMON GRATZAT,IAL,IFT,IFR,LEWALC,WIND,ION
5 -----
6 IYIN(AL)=IFIX(SIGN((ABS(AL)+.5),AL))
7 -----
8 NIP=WTW(X,Y)
9 SPH=SDN(X,Y)
10 IF (SPD*FE.999.) SPD=SPC*CORF1
11 IF (T.LE.999.) GOTO 100
12 T=999.99
13 UT=999.99
14 TC=T-UT
15 IF (P.LE.999.) GOTO 103
16 PS=DS*999.9999
17 GO TO 104
18 103 PS=.10**P
19 104 IF (T.LE.999.) GOTO 106
20 DS=999.9999
21 VS=999.99
22 GO TO 110
23 106 IF (P.LE.999.) GOTO 108
24 DS=999.9999
25 GO TO 109
26 108 DS=(PS/T)*348.38
27 109 VS=(331.45*SQRT(T/273.15))*.COM1
28 110 IF (FS.GE.-999.) GOTO 112
29 FX=999.99
30 GO TO 118
31 117 FX=-FS*.COM2
32 119 IF (X.LE.999..AND.XIP.LE.999.) GOTO 112
33 WS=.999
34 GO TO 123
35 112 WS=SQRT((X-XIP)*(X-XIP))+((Y-YIP)*(Y-YIP))*COM2)/(HS-HSP)
36 113 IF(HSL.FO.HS) PS=DS*999.9999
37 IF(HSL.T.20000.Q)RETURN
38 IF(HSL.LI.65610.66.AND.COM1.NE.1.) RETURN
39 WRITE(2,1) IYIN(HSL),IRIN(DIR),IRID(SPD),T,TC,PS,DS,FX,VS,WS
40 FORMAT(14,1I2,2I6,2F6.2,2F9.4,2F6.2,5E3.4X)
41 WSP=HS
42 XIP=X
43 YIP=Y
44 PFTURN
45 END

```

```

1  FUNCTION WDIR(X,Y)
2  C-----// UNCORRECTED WIND DIRECTION (DEGREES)
3  C-----// WDIR/ CORRECTED WIND DIRECTION (DEGREES)
4  C-----// X WIND COMPONENT
5  C-----// Y WIND COMPONENT
6  C-----
7  IF(X.LE.998.) GO TO 100
8  WDIR=999.0
9  RETURN
10 C-----
11 100 IF(X.NE.0.) GO TO 110
12 IF(Y.GE.0.) WDIR=360.
13 IF(Y.LT.0.) WDIR=180.
14 RETURN
15 C-----
16 110 D=ATAN(Y/X)*57.29576
17 IF(X.GT.0.)WDIR=90.-D
18 IF(X.LT.0.)WDIR=270.-D
19 IF(WDIR.LT.0.)WDIR=360.
20 RETURN
21 C-----
22 ENTRY WSPD
23 C-----
24 IF(X.LE.998.) GO TO 120
25 WDIR=999.0
26 RETURN
27 120 WDIR=SQRT(X*X+Y*Y)
28 RETURN
29 END
30

```

PAGE 1

84/08/14. 14.39.45

FIN 5.1.4.52

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42134

70774 60115013

```

FUNCTION VALU(P,A,B)
C-----INTERPOLATES A VALUE BY RATIO (P) BETWEEN LEVELS A AND B
IF(A.GT.COU+.000009)GO TO 101
GO TO 100
101 VALUE=999.99
RETURN
102 IF(A.LT.-999.99)GO TO 102
GO TO 103
102 VALUE=-999.99
RETURN
103 VALUE=R*(A-B)
RETURN
END

```

A-158

A-159

```

54  REMFILE 1
55  REMIND 1
56  REMIND 2
57  REMIND 3
58  REMIND 4
59  REMIND 5
60  REMIND 6
61  REMIND 7
62  REMIND 8
63  REMIND 9
64  REMIND 10
65  REMIND 11
66  REMIND 12
67  REMIND 13
68  REMIND 14
69  REMIND 15
70  REMIND 16
71  REMIND 17
72  REMIND 18
73  REMIND 19
74  REMIND 20

```

```

3  FORMAT(3X,TIME,SEC,AZIMUTH,ELEVATION,ENG,MTS,HGT,MTS,
4  C,HP,MIN,SEC,8X,TIME,AZIMUTH,ELEVATION,7X,RANGE,
5  C,ALTITUDE,7X)
6  FORMAT(1X,3AL0)
7  FORMAT(1X,3AL0)
8  FORMAT(1X,3AL0)
9  FORMAT(1X,3AL0)
10  FORMAT(1X,3AL0)
11  FORMAT(1X,3AL0)
12  FORMAT(1X,3AL0)
13  FORMAT(1X,3AL0)
14  FORMAT(1X,3AL0)
15  FORMAT(1X,3AL0)
16  FORMAT(1X,3AL0)
17  FORMAT(1X,3AL0)
18  FORMAT(1X,3AL0)
19  FORMAT(1X,3AL0)
20  FORMAT(1X,3AL0)

```

```

END

```


1 01/01/16
 2 01/01/16
 3 01/01/16
 4 01/01/16
 5 01/01/16
 6 01/01/16
 7 01/01/16
 8 01/01/16
 9 01/01/16
 10 01/01/16
 11 01/01/16
 12 01/01/16
 13 01/01/16
 14 01/01/16
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 93 01/01/16
 94 01/01/16
 95 01/01/16
 96 01/01/16
 97 01/01/16
 98 01/01/16
 99 01/01/16
 100 01/01/16

A-163

537

```

C-----
1      FORMAT(MA10)
2      FORMAT(1,4,5,2,9,1)
3      FORMAT(1,3,6,5,0)
4      FORMAT(1,4,5,2,9,1)
5      FORMAT(1,4,1,5,0)
5      FORMAT(1,4,7,9,7)
C-----
1,0

```

```

1 SUBROUTINE INTPTMP
2 SCANS TEMPERATURES LOOKING FOR MISSING DATA OF 1.53
3 TIME 2.5 20 TO INTERPOLATE
4
5 C-----START AT TOP LOOKING FOR FIRST GOOD TEMP
6 97 450.1
7 100 READ(2,END=99)IG,T,X,Y,Z
8 99 IF(IG.EQ.1) GO TO 98
9 98 BACKSPACE 2
10 READ(2)IG,T,X,Y,Z
11 IF(IG.EQ.2) GO TO 97
12 GO TO 98
13 FNOFILF 1
14 REWIND 1
15 RETURN
16
17 101 IF(MSW.GT.1) GO TO 104
18 IF(1.EQ.999.9) GO TO 106
19 107 450.2
20 108 211.1
21 246.6
22 247.2
23 WRITE(116,T,X,Y,Z
24 GO TO 100
25 104 IF(MSW.GT.2) GO TO 105
26 IF(1.EQ.999.9) GO TO 109
27 GO TO 108
28 109 MSW=3
29 GO TO 100
30 105 IF(1.EQ.999.9) GO TO 100
31 211.1
32 246.6
33 247.2
34 IF(247.2-211.1.GT.3000.) GO TO 98
35 BACKSPACE 2
36 BACKSPACE 2
37 READ(2)IG,T,X,Y,Z
38 IF(IG.EQ.2) GO TO 112
39 GO TO 111
40 112 READ(2)IG,T,X,Y,Z
41 IF(IG.EQ.2) GO TO 107
42 PAT=(246.6)/(246-211)
43 WRITE(116,T,X,Y,Z
44 GO TO 112
45 END

```

ROCK 3

```

1  SUPPLEMENTARY 34.010C(NIGHT)
2  DOCS BALLISTIC MOTION AND TEMPERATURES CORRECTION
3  COMMAND: MAAIT,HAL,PAL,TEL,PLC,PC,COM,CO,2,MSD,VIP,IT,ST,WM,NO,
4  CRY,NT,LO,NS,2,IP,IR,2,CA,10,0,DEPP,2,CS,IN,0,0,INX(10),100CK
5  COMMON: GPAT,ZAT,JAL,IKT,IMR,ICW,ICW,INQ,ICN
6  COMMON: DATA/ATC(51),STC(51),CTC(51),OTC(51),CTD(51)
7  READ(2) H1,Z1,X1,Y1,T1,G1
8  IF(1) H2,Z2,X2,Y2,T2,G2
9  IF(2) H3,Z3,X3,Y3,T3,G3
10  T=GGG.9
11  DT=G3-G1
12  GP=GPAT+9.0010
13  D=((Z3-Z1)/DT)+GP
14  VX = X2 - ((Z2*((X3-X1) / DT)) / D)
15  VY = Y2 - ((Z2*((Y3-Y1) / DT)) / D)
16  XC=VX-X2
17  YC=VY-Y2
18  V=SQRT(Z2**2+XC**2+YC**2)
19  IF (H2.LT.2000.) GO TO 103
20  IF (IND.EQ.2.NP,IND.EQ.3) GO TO 103
21  IF ((T1.EQ.999.9.OR.T2.EQ.999.9).OR.T3.EQ.999.9) GO TO 108
22  T=T1-IFX(H2/1000.)
23  IF (H2.GE.70000.) I=1
24  T4=T2**4
25  AA=ATC(I)*(V+V1
26  AP = ATC(I) + ((T3-T1)/DT)
27  AC = CTC(I)
28  IF (NIGHT.EQ.1) AC=CTD(I)
29  AD=ATC(I)*T4
30  T = T2 - AA + AB - AC + AD
31  GO TO 108
32  T=T2
33  LC8
34  WPI(T(1)H2,Z2,VX,VY,X2,Y2,T,T2
35  H2=H3
36  Z1=Z2
37  X1=X2
38  Y1=Y2
39  T1=T2
40  T2 = T3
41  G1=G2
42  G2=G3
43  GO TO 100
44  ENDFILE 1
45  REWIND 1
46  REWIND 2
47  RETURN
48  RETURN
49  END
50  END

```

A-168

```

50  GOTO 132
51  L31
52  T=11
53  COUTPUP
54  C-----
55  K=1
56  KK=9
57  A=L
58  DO 140 I=K, KK
59  IF (HEIGHT(I).EQ.0.0) GOTO 509
60  A=A+ARS(TMPDIF(I))
61  A=A/9.
62  IF (A.LE.2.5) THEN
63  4RL=HEIGHT(K)
64  TRI=PTIMP(K)+773.15
65  4RL=PPPS(K)
66  I4=((CRAT+(PE+4RL)/(PE+MBL))+5.)/10.
67  IP=PBL+100.+5
68  IT=B(K)+10.-5
69  WRITE(3,12) I4,IP,IT
70  NEWIND 1
71  RETURN
72  END IF
73  K=K+1
74  KK=KK+1
75  IF (KK.LE.41) GOTO 155
76  MBL=PBL-TBL=999.9
77  WRITE(8,11)
78  REMIND 1
79  RETURN
80  C-----
81  FPMAT(//8A4//R4//)
82  FPMAT(8A10)
83  FPMAT(F6.0,14,F2.0,4,1,12,F6.2)
84  FPMAT(14,11X,"* * TEMPERATURE COMPARISON * * *")
85  C " ROCKETSONDE",24X,"RAWINSONDE"/
86  FPMAT(" TEST NBR ",15/" ROCKET ",10,2X,410)
87  FPMAT(" ",3A10,5X,8A4)
88  FPMAT(" ",14,2X,16,1X,A4,14,17X,8A4//)
89  FPMAT(" ALTITUDE",4X,"TEMPERATURE DEGRES C"/
90  C " METERS " ROCKET RAWINSONDE DIFFERENCE"/)
91  FPMAT(" ",17,F10.2,F11.2,F12.1)
92  FPMAT(12A4)
93  FPMAT(10000 9999-9999)
94  FPMAT(14,15,14)
95  C-----
96  END

```

A-170

PAGE 2

34/00/14. 14.39.41

111 00.4122

74/74 20100

00 202 J=101
 RACKSPACE 2
 ADDRESS 2
 217000A
 202 WRITE(1)A
 ENFILE 1
 REWIND 1
 REWIND 2
 RETURN
 END

58
 59
 60
 61
 62
 63
 64
 65
 66
 67

543:1177,

[illegible]

A-173

A-174

```

1  SUBROUTINE PLOTCH
2  DIMENSION IN(4),ICT(10)
3  WRITE(6,*)
4  FORMAT('M')
5  PRINT 2
6  DO 100 I=1,4
7  READ(2,1) IN
8  WRITE(6,1) IN
9  100  FORMAT('A10')
10  1  FORMAT('A10')
11  2  WRITE(6,1) IN
12  3  FORMAT('H')
13  WRITE(6,1) IN
14  7  FORMAT('1X, 4H205 210 215 220 225 230 235 240 245 250 2')
15  C55 260 265 270 275 280 285 290 295 300
16  WRITE(6,1) IN
17  200  READ(2,1) END=210)
18  GOTO 200
19  BACKSPACE 2
20  BACKSPACE 2
21  BACKSPACE 2
22  DO 102 K=1,10
23  ICT(K)=10H
24  DO 108 K=5,100,5
25  CALL PUTC(ICT,K,P,M)
26  BACKSPACE 2
27  BACKSPACE 2
28  READ(2,4) HS,I
29  IF(HS.EQ.0.) GO TO 103
30  IF(HS.GT.7000.) GOTO 110
31  FORMAT(1X,F7.0,12X,E8.2)
32  K=M-200
33  IF (I.F0.999.99) KK=100
34  IE (KK.LE.0.E8.KK.GE.101) KK=100
35  CALL PUTC(ICT,KK,R,M)
36  WRITE(6,1) IN
37  5  FORMAT(17X,10A10)
38  GO TO 110
39  103 PRINT 2
40  RETURN
41  END

```

```

1  SUBROUTINE PUTOUT(MAXALTS)
2  DIMENSION MAXALTS(3),IN(0)
3  C-----
4  FORMAT(PALU)
5  FORMAT(//,9" MAXIMUM ALTITUDE "9.16," GEOMET")
6  FORMAT(MIM)
7  FORMAT(//,9" MAXIMUM ALTITUDE "9.16," GEOMET")
8  C-----
9  N=1
10 WRITE(6,1,3)
11 READ(2,1,END=105) IN
12 GOTO 110
13 IF (N.NE.3) WRITE(6,1,2) MAXALTS(N)
14 IF (N.FO.3) WRITE(6,1,4) MAXALTS(N)
15 WRITE(6,1,3)
16 N=N+1
17 IF (N.GT.3) RETURN
18 CLOSE(2,STATUS='KEEP')
19 OPEN(2,BUF=512)
20 GOTO 100
21 WRITE(6,1,1) IN
22 WRITE(10,1) IN
23 GOTO 100
24 C-----
25 END

```

```

1  CURRUTER 1750M
2  DIMENSION Y4(20),Y4(20),Y4(20),Y4(20),Y4(20),Y4(20),Y4(20),Y4(20),
3  Y4(20),Y4(20)
4  COMMON MAYALIT,HFL,MHL,TRU,PE,PC,Q,IF,CON2,MSP,VIP,VI,ST,NH,ND,
5  CNY,NT,INDANS,LY,IZ,IR,IC,LD,NOTE,PP,NORS,TH(VR),INX(12),IRUCK
6  COMMON GRAT,ZAT,IAL,IT,ITP,ITF,ICM,IND),JON
7  COMMON CODE/MH,X,Y,UX,UY,UT,UTP,PF
8  COMMON/PRES/PL(35)
9  FORMAT(1AL)
10 -----
11  PIVIND 1
12  PIVIND 2
13  ST=999.9
14  C----- START HANDDATA
15  ON 98 J=1.5
16  PEA(12,5)IN
17  98 WPIE(162,5)IN
18  C COMPUTE 1000 METER DATA AND PICK SIGNIFICANT LEVELS
19  92 ON 50 I=1.25
20  50 H4(1)=X4(1)-Y4(1)=UX4(1)=UY4(1)=T4(1)=UT4(1)=P4(1)=G.0
21  C----- INITIALIZE
22  H=IR=TLIP=DT=Q=0
23  ICNT=IFLAG=JP=0
24  IRFC=IP=IEND=IT=1
25  DO 51 I=1,25
26  READ(1,END=97) H4(1),X4(1),Y4(1),UX4(1),UY4(1),T4(1),UT4(1),
27  C P4(1),F4(1)
28  IF(H4(1)).LT.1.1 GO TO 92
29  IF(JNE.1) GO TO 12
30  C----- INITIALIZE MIN AND MAX TEMPERATURE
31  TMN=T4(1)
32  TMX=T4(1)
33  IS1=IS2=1
34  HL=H4(1)
35  J=ML/1000.
36  H1=HL+1000.
37  HL=J*1000
38  12 IF(TMX.GE.T4(1)) GO TO 13
39  TMX=T4(1)
40  IS1=1
41  13 IF(TMN.LE.T4(1)) GO TO 15
42  TMN=T4(1)
43  IS2=1
44  15 IF(H4(1).GE.H1) GO TO 30
45  51 CONTINUE
46  30 IP=IT
47  IF(IS1.LT.IS2) GO TO 16
48  IF(IS1.EQ.IS2) IFLAG=ICNT=3
49  C----- MIN TEMPERATURE ROUTINE
50  29 IF(IFLAG.EQ.1) GO TO 52
51  IF(IFLAG.EQ.3.AND.ICNT.EQ.1) GO TO 31
52  IT=IS2
53  IF(IT.EQ.1) GO TO 28
54  IFLAG=1
55  IF(IS2.EQ.1.OR.IS2.EQ.1) GO TO 27
56  IF(ICNT.GE.1) GO TO 29
57  GO TO 14

```

[illegible]


```

115 GO TO 94
116 C----- OUTPUT MAGNETIC LEVEL
117 30 PAT=(M1-M4(IP))/((M4(IP-1)-M4(IP))
118 4004/10.
119 X=VALUE(PAT,M4(IP-1),X4(IP))
120 Y=VALUE(PAT,M4(IP-1),Y4(IP))
121 T=VALUE(PAT,M4(IP-1),T4(IP))
122 D=VALUE(PAT,M4(IP-1),D4(IP))
123 C=VALUE(PAT,M4(IP-1),C4(IP))
124 UX=VALUE(PAT,M4(IP-1),UX4(IP))
125 UY=VALUE(PAT,M4(IP-1),UY4(IP))
126 UT=VALUE(PAT,M4(IP-1),UT4(IP))
127 IF(IP.EQ.92) GO TO 92
128 CALL CUNIT
129 ST=T4(IP)
130 BACKSPACE 1
131 GO TO 92
132 C 97 OUTPUT LAST DATA POINT
133 BACKSPACE 1
134 BACKSPACE 1
135 READ(1)H,X,Y,UX,UY,T,UT,P,F
136 H = H / 10.
137 CALL CUNIT
138 REWIND 1
139 REWIND 2
140 C----- START CPLEVELS
141 J=1
142 READ(1)H,X1,Y1,UX1,UY1,T1,UT1,P1,F1
143 100 PEAD(1,END=100)H2,X2,Y2,UX2,UY2,T2,UT2,P2,F2
144 101 IF(P1-GE.999.) GO TO 104
145 IF(J .EQ. 24) GO TO 102
146 IF(J .EQ. 29) GO TO 102
147 IF(J .EQ. 34) GO TO 102
148 IF(PL(J) .GT. P1) GO TO 102
149 GO TO 103
150 J=J+1
151 GO TO 101
152 IF(PL(J).LE.P2) GO TO 104
153 GO TO 104
154 H1=H2
155 X1=X2
156 Y1=Y2
157 UX1=UX2
158 UY1=UY2
159 T1=T2
160 UT1=UT2
161 P1=P2
162 F1=F2
163 GO TO 100
164 WAT=(PL(J)-P2)/(P1-P2)
165 H=H2*(1-H2)*H2
166 X=VALUE(PAT,X1,X2)
167 Y=VALUE(PAT,Y1,Y2)
168 UX=VALUE(PAT,UX1,UX2)
169 UY=VALUE(PAT,UY1,UY2)
170 T=VALUE(PAT,T1,T2)
171 UT=VALUE(PAT,UT1,UT2)

```

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04/08/74 14.39.45

FTN 0.1+152

74/74 10100

```

172  EVALUATE(PAT,1,0,0,2)
173  -----
174  CONVERT GEOMETRIC POINT TO CIRCUMFERENTIAL
175  M = GCAT * (PC * H) / (Gr * 4) / 100
176  CALL(JJ)
177  CALL CUNIT
178  GO TO 104
179  104  REWIND 1
180  CALL PORDVIN
181  RETURN
182  END

```

```

1 SUBROUTINE CORRIT
2 C=PI*2/360
3 DIMENSION IS(9)
4 DATA IS/1,2,3,4,5,6,7,8,9/
5 C=PI*2/360
6 I=0
7 IF (PH.EQ.H) RETURN
8 N1=ABS(X,Y)
9 SP=ABS(X,Y)
10 IF (X.LT.0) GO TO 102
11 X=ABS(X)
12 GO TO 106
13 102 X=X-X
14 Y=Y-Y
15 Y=Y-Y
16 IF (LT.999.160) TO 108
17 T=9999.
18 TC=VS-999.
19 GO TO 109
20 108 VS=331.45+SQRT(T/273.15)
21 T=T-T
22 T=T-273.15
23 U=UT-273.15
24 IC=I-UI
25 PS=NS-99.99999
26 IF (P.LT.999.1) PS=10**P
27 IF (T.NE.9999.1) NS=(PS/11)*368.38
28 D=PS
29 K=11
30 DO 10 I=1,2
31 I=I+1
32 A=10000.
33 A=10000.
34 A=10000.
35 C=0.01
36 IC=0
37 IF (P.GT.99.160) TO 1
38 GO TO 2
39 1 N=9.999
40 K=IS(O)
41 GO TO 5
42 2 IF (D.LE.A.AND.O.GE.A) GO TO 3
43 GO TO 4
44 3 IC=IC+1
45 D=D+C
46 K=IS(IC)
47 GO TO 5
48 4 A=R
49 R=P/10.
50 C=C+10.
51 IC=IC+1
52 GO TO 2
53 5 IF (I.E.O.1) GO TO 6
54 NS=I
55 I2=K
56 GO TO 10
57 6 PS=I

```

```

51 1100
52 0000
53 0012
54 0012
55 0012
56 0012
57 0012
58 0012
59 0012
60 0012
61 0012
62 0012
63 0012
64 0012
65 0012
66 0012
67 0012
68 0012
69 0012
70 0012
71 0012
72 0012
73 0012
74 0012
75 0012
76 0012
77 0012
78 0012
79 0012
80 0012
81 0012
82 0012
83 0012
84 0012
85 0012
86 0012
87 0012
88 0012
89 0012
90 0012
91 0012
92 0012
93 0012
94 0012
95 0012
96 0012
97 0012
98 0012
99 0012
100 0012

```

44/05/14. 14.39.42

71N 5.1455?

94/46 50105

1. I have a question.

```

1 SUBROUTINE ENDPAVF
2 COPEN= MAXALF+MFL+PCL+TCL+R+PC+CM+CR+Q+QCO+V+VCO+VIA+VLE+ST+NM+ND
3 CNYMAT=INBND+IV+IA+IP+IC+IF+NITE+P+RCC+IN(C)+INX(I)+IPROR
4
5 C-----
6 1 FORMAT(44,I19,A10)
7 2 FORMAT(24,///9A4/9A4/)
8 3 FORMAT(PA10)
9 C-----
10 W250=0
11 WFLTD=250
12 WRITE(62,2) INX
13 C-----
14 READ(250,1)
15 GO TO 10A
16 C-----
17 110 READ(250,1,END=99) INC,IN
18 IF (INC.NE.4H ) WRITE(62,3) IN
19 GO TO 110
20 C-----
21 ENDFILE 62
22 RETURN
23 END

```

```

1 SUBROUTINE INT
2
3 READ(2, 41, X1, Y1, UX1, UY1, T1, P1, F1)
4 READ(2, 42, X2, Y2, UX2, UY2, T2, P2, F2)
5 IF ((H2-H1).GT.1000.) GOTO 210
6 H1=H2
7 X1=X2
8 Y1=Y2
9 UY1=UY2
10 UY1=UY2
11 T1=T2
12 UT1=UT2
13 P1=P2
14 F1=F2
15 GOTO 100
16
17 200 CONTINUE
18 H = (H1/1000)*1000
19 HS = H+1000.
20 IF ((HS+300).GT.H2) GOTO 110
21 RAT = (H2-HS)/(H2-H1)
22 X = (PAT*(X1-X2))+X2
23 Y = (PAT*(Y1-Y2))+Y2
24 UX = (RAT*(UX1-UX2))+UX2
25 UY = (RAT*(UY1-UY2))+UY2
26 T = (RAT*(T1-T2))+T2
27 UT = (PAT*(UT1-UT2))+UT2
28 P = (PAT*(P1-P2))+P2
29 F = (RAT*(F1-F2))+F2
30 WRITE(1) HS, X, Y, UX, UY, T, UT, P, F
31 HS = HS+1000.
32 GOTO 210
33
34 C-----
35 WRITE(1) H2, X2, Y2, UX2, UY2, T2, UT2, P2, F2
36 ENDFILE 1
37 RETURN 1
38 RETURN 2
39 RETURN
40 END

```

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```

54      GOTO 230
55      IF (CODE(1,5,4,NDFF-F(IGROUP)))
56      -----
57      230  IF (CODE(1,5,4,NDFF-F(IGROUP))) GOTO 240
58      TESTP = 100.
59      240  IF (250,IP=1,10)
60      250  IF (PPP,GF,TESTP) GOTO 260
61      TESTP = TESTP/10.
62      CONTINUE
63      260  GOTO 240
64      260  IF (IP=1)
65      260  IF (PPP,GF,TESTP) GOTO 260
66      IF (CODE(1,5,4,NDFF-F(IGROUP))) IP,1W09KD
67      GOTO 26
68      240  ENCODE(1,5,4,NDFF-F(IGROUP))
69      GOTO 26
70      -----
71      27  MIN=ND(NT,100)
72      IHR=NT/100
73      MIN=MIN+5
74      IF (MIN,GE,60) MIN=0
75      IF (MIN,EQ,0) IHR=IHR+1
76      IF (IHR,EQ,24) IHR=0
77      NT=(IHR*10)+(MIN/10)
78      INTIND=74794
79      NYV = NY-1000
80      WRITE (61,20002) ND,NT,NH,NYV,INTIND,IAL,IND,IKT,IMR,IND,
81      C IEM,ICW,IMR
82      WRITE (ICD,20002) ND,NT,NH,NYV,INTIND,IAL,IND,IKT,IMR,IND,
83      C IEM,ICW,IMR
84      WRITE (61,20001) (HHZT(IK),DDEFF(K),NDPPP(K),K=1,IGROUP)
85      WRITE (ICD,20001) (HHZT(IK),DDEFF(K),NDPPP(K),K=1,IGROUP)
86      STANDARD MANDATORY LEVEL DATA
87      -----
88      CALL MANOL
89      -----
90      20001  200031
91      20003  200031
92      20003  200031
93      20003  200031
94      20003  200031
95      20003  200031
96      20003  200031

```



```

1 SUBROUTINE MAIN
2 COMMON XVAL(1,P1),YVAL(1,P2),ZVAL(1,P3),WVAL(1,P4),UVAL(1,P5),VVAL(1,P6),XERR(1,P7),YERR(1,P8),ZERR(1,P9),WERR(1,P10),UERR(1,P11),VERR(1,P12),XERR(1,P13),YERR(1,P14),ZERR(1,P15),WERR(1,P16),UERR(1,P17),VERR(1,P18),XERR(1,P19),YERR(1,P20),ZERR(1,P21),WERR(1,P22),UERR(1,P23),VERR(1,P24),XERR(1,P25),YERR(1,P26),ZERR(1,P27),WERR(1,P28),UERR(1,P29),VERR(1,P30),XERR(1,P31),YERR(1,P32),ZERR(1,P33),WERR(1,P34),UERR(1,P35),VERR(1,P36),XERR(1,P37),YERR(1,P38),ZERR(1,P39),WERR(1,P40),UERR(1,P41),VERR(1,P42),XERR(1,P43),YERR(1,P44),ZERR(1,P45),WERR(1,P46),UERR(1,P47),VERR(1,P48),XERR(1,P49),YERR(1,P50),ZERR(1,P51),WERR(1,P52),UERR(1,P53),VERR(1,P54),XERR(1,P55),YERR(1,P56),ZERR(1,P57),WERR(1,P58),UERR(1,P59),VERR(1,P60),XERR(1,P61),YERR(1,P62),ZERR(1,P63),WERR(1,P64),UERR(1,P65),VERR(1,P66),XERR(1,P67),YERR(1,P68),ZERR(1,P69),WERR(1,P70),UERR(1,P71),VERR(1,P72),XERR(1,P73),YERR(1,P74),ZERR(1,P75),WERR(1,P76),UERR(1,P77),VERR(1,P78),XERR(1,P79),YERR(1,P80),ZERR(1,P81),WERR(1,P82),UERR(1,P83),VERR(1,P84),XERR(1,P85),YERR(1,P86),ZERR(1,P87),WERR(1,P88),UERR(1,P89),VERR(1,P90),XERR(1,P91),YERR(1,P92),ZERR(1,P93),WERR(1,P94),UERR(1,P95),VERR(1,P96),XERR(1,P97),YERR(1,P98),ZERR(1,P99),WERR(1,P100),UERR(1,P101),VERR(1,P102),XERR(1,P103),YERR(1,P104),ZERR(1,P105),WERR(1,P106),UERR(1,P107),VERR(1,P108),XERR(1,P109),YERR(1,P110),ZERR(1,P111),WERR(1,P112),UERR(1,P113),VERR(1,P114),XERR(1,P115),YERR(1,P116),ZERR(1,P117),WERR(1,P118),UERR(1,P119),VERR(1,P120),XERR(1,P121),YERR(1,P122),ZERR(1,P123),WERR(1,P124),UERR(1,P125),VERR(1,P126),XERR(1,P127),YERR(1,P128),ZERR(1,P129),WERR(1,P130),UERR(1,P131),VERR(1,P132),XERR(1,P133),YERR(1,P134),ZERR(1,P135),WERR(1,P136),UERR(1,P137),VERR(1,P138),XERR(1,P139),YERR(1,P140),ZERR(1,P141),WERR(1,P142),UERR(1,P143),VERR(1,P144),XERR(1,P145),YERR(1,P146),ZERR(1,P147),WERR(1,P148),UERR(1,P149),VERR(1,P150),XERR(1,P151),YERR(1,P152),ZERR(1,P153),WERR(1,P154),UERR(1,P155),VERR(1,P156),XERR(1,P157),YERR(1,P158),ZERR(1,P159),WERR(1,P160),UERR(1,P161),VERR(1,P162),XERR(1,P163),YERR(1,P164),ZERR(1,P165),WERR(1,P166),UERR(1,P167),VERR(1,P168),XERR(1,P169),YERR(1,P170),ZERR(1,P171),WERR(1,P172),UERR(1,P173),VERR(1,P174),XERR(1,P175),YERR(1,P176),ZERR(1,P177),WERR(1,P178),UERR(1,P179),VERR(1,P180),XERR(1,P181),YERR(1,P182),ZERR(1,P183),WERR(1,P184),UERR(1,P185),VERR(1,P186),XERR(1,P187),YERR(1,P188),ZERR(1,P189),WERR(1,P190),UERR(1,P191),VERR(1,P192),XERR(1,P193),YERR(1,P194),ZERR(1,P195),WERR(1,P196),UERR(1,P197),VERR(1,P198),XERR(1,P199),YERR(1,P200),ZERR(1,P201),WERR(1,P202),UERR(1,P203),VERR(1,P204),XERR(1,P205),YERR(1,P206),ZERR(1,P207),WERR(1,P208),UERR(1,P209),VERR(1,P210),XERR(1,P211),YERR(1,P212),ZERR(1,P213),WERR(1,P214),UERR(1,P215),VERR(1,P216),XERR(1,P217),YERR(1,P218),ZERR(1,P219),WERR(1,P220),UERR(1,P221),VERR(1,P222),XERR(1,P223),YERR(1,P224),ZERR(1,P225),WERR(1,P226),UERR(1,P227),VERR(1,P228),XERR(1,P229),YERR(1,P230),ZERR(1,P231),WERR(1,P232),UERR(1,P233),VERR(1,P234),XERR(1,P235),YERR(1,P236),ZERR(1,P237),WERR(1,P238),UERR(1,P239),VERR(1,P240),XERR(1,P241),YERR(1,P242),ZERR(1,P243),WERR(1,P244),UERR(1,P245),VERR(1,P246),XERR(1,P247),YERR(1,P248),ZERR(1,P249),WERR(1,P250),UERR(1,P251),VERR(1,P252),XERR(1,P253),YERR(1,P254),ZERR(1,P255),WERR(1,P256),UERR(1,P257),VERR(1,P258),XERR(1,P259),YERR(1,P260),ZERR(1,P261),WERR(1,P262),UERR(1,P263),VERR(1,P264),XERR(1,P265),YERR(1,P266),ZERR(1,P267),WERR(1,P268),UERR(1,P269),VERR(1,P270),XERR(1,P271),YERR(1,P272),ZERR(1,P273),WERR(1,P274),UERR(1,P275),VERR(1,P276),XERR(1,P277),YERR(1,P278),ZERR(1,P279),WERR(1,P280),UERR(1,P281),VERR(1,P282),XERR(1,P283),YERR(1,P284),ZERR(1,P285),WERR(1,P286),UERR(1,P287),VERR(1,P288),XERR(1,P289),YERR(1,P290),ZERR(1,P291),WERR(1,P292),UERR(1,P293),VERR(1,P294),XERR(1,P295),YERR(1,P296),ZERR(1,P297),WERR(1,P298),UERR(1,P299),VERR(1,P300),XERR(1,P301),YERR(1,P302),ZERR(1,P303),WERR(1,P304),UERR(1,P305),VERR(1,P306),XERR(1,P307),YERR(1,P308),ZERR(1,P309),WERR(1,P310),UERR(1,P311),VERR(1,P312),XERR(1,P313),YERR(1,P314),ZERR(1,P315),WERR(1,P316),UERR(1,P317),VERR(1,P318),XERR(1,P319),YERR(1,P320),ZERR(1,P321),WERR(1,P322),UERR(1,P323),VERR(1,P324),XERR(1,P325),YERR(1,P326),ZERR(1,P327),WERR(1,P328),UERR(1,P329),VERR(1,P330),XERR(1,P331),YERR(1,P332),ZERR(1,P333),WERR(1,P334),UERR(1,P335),VERR(1,P336),XERR(1,P337),YERR(1,P338),ZERR(1,P339),WERR(1,P340),UERR(1,P341),VERR(1,P342),XERR(1,P343),YERR(1,P344),ZERR(1,P345),WERR(1,P346),UERR(1,P347),VERR(1,P348),XERR(1,P349),YERR(1,P350),ZERR(1,P351),WERR(1,P352),UERR(1,P353),VERR(1,P354),XERR(1,P355),YERR(1,P356),ZERR(1,P357),WERR(1,P358),UERR(1,P359),VERR(1,P360),XERR(1,P361),YERR(1,P362),ZERR(1,P363),WERR(1,P364),UERR(1,P365),VERR(1,P366),XERR(1,P367),YERR(1,P368),ZERR(1,P369),WERR(1,P370),UERR(1,P371),VERR(1,P372),XERR(1,P373),YERR(1,P374),ZERR(1,P375),WERR(1,P376),UERR(1,P377),VERR(1,P378),XERR(1,P379),YERR(1,P380),ZERR(1,P381),WERR(1,P382),UERR(1,P383),VERR(1,P384),XERR(1,P385),YERR(1,P386),ZERR(1,P387),WERR(1,P388),UERR(1,P389),VERR(1,P390),XERR(1,P391),YERR(1,P392),ZERR(1,P393),WERR(1,P394),UERR(1,P395),VERR(1,P396),XERR(1,P397),YERR(1,P398),ZERR(1,P399),WERR(1,P400),UERR(1,P401),VERR(1,P402),XERR(1,P403),YERR(1,P404),ZERR(1,P405),WERR(1,P406),UERR(1,P407),VERR(1,P408),XERR(1,P409),YERR(1,P410),ZERR(1,P411),WERR(1,P412),UERR(1,P413),VERR(1,P414),XERR(1,P415),YERR(1,P416),ZERR(1,P417),WERR(1,P418),UERR(1,P419),VERR(1,P420),XERR(1,P421),YERR(1,P422),ZERR(1,P423),WERR(1,P424),UERR(1,P425),VERR(1,P426),XERR(1,P427),YERR(1,P428),ZERR(1,P429),WERR(1,P430),UERR(1,P431),VERR(1,P432),XERR(1,P433),YERR(1,P434),ZERR(1,P435),WERR(1,P436),UERR(1,P437),VERR(1,P438),XERR(1,P439),YERR(1,P440),ZERR(1,P441),WERR(1,P442),UERR(1,P443),VERR(1,P444),XERR(1,P445),YERR(1,P446),ZERR(1,P447),WERR(1,P448),UERR(1,P449),VERR(1,P450),XERR(1,P451),YERR(1,P452),ZERR(1,P453),WERR(1,P454),UERR(1,P455),VERR(1,P456),XERR(1,P457),YERR(1,P458),ZERR(1,P459),WERR(1,P460),UERR(1,P461),VERR(1,P462),XERR(1,P463),YERR(1,P464),ZERR(1,P465),WERR(1,P466
```

```

54 IF (J,LT,16) JS=2
55 IF (I,LT,10) J=1
56 IF (I,GT,90000) GO TO 221
57 I=I-1
58 IT=I
59 IF (IT,LE,99) GOTO 217
60 K2 = 0
61 IT = IT-100
62 GOTO 214
63
64 217 IF (IT,LE,6) GOTO 219
65 KA = 5
66 GOTO 218
67
68 219 KA = 0
69 IT = -IT
70
71 214 ENCODE(6,1,OUT(M)) ISIG(JS),<A,IT
72 GOTO 220
73 ENCODE(6,2,OUT(M)) ISIG(JS)
74 M=M+1
75 F1 = .5
76 IF (PL(I)) .LT. 9.) F1 = .05
77 IF (PL(I)) .LT. -1.) F1 = .005
78 IF (PL(I)) .LT. -2.) F1 = .0005
79 IF (PL(I)) .LT. -3.) F1 = .00005
80 IF (PL(I)) .LT. -4.) F1 = .000005
81 IPS = (10.+(PL(I) + F1) * (10 ** JS / 10)
82 IH = ((GRAT * (RE * H) / (PE + 4)) + 5.) / 100.
83 IF (JS .EQ. 6) IH = IH / 10
84 ENCODE(6,3,OUT(M)) IPS,IH
85 M = M+1
86
87 C-----
88 IND = (DIR + 5.) / 10
89 ISS=SPN+.5
90 IF (IND,LT,999.AND,ISS,LT,999) GOTO 234
91 ENCODE(6,4,OUT(M))
92 234 IF (I00,FQ,0) I00=36
93 ENCODE(6,3,OUT(M)) I00,ISS
94 M=M+1
95 IF (EQF(1),NE,0) GOTO 252
96 GOTO 104
97
98 C-----
99 250 IF (PL(I),NE,PL) GOTO 252
100 M2=M1
101 X2=X1
102 Y2=Y1
103 T2=T1
104 P2=P1
105 GO TO 105
106
107 C-----
108 252 IF (M,EQ,1) GO TO 290
109 M = M-1
110 WRITE(100,5) (OUT(I),I=1,M)
111 5PTF(1,5) (OUT(I),I=1,M)
112 290 REFINO 2
113 RETURN
114 END

```

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SECTION B

METEOROLOGICAL SOUNDING SYSTEM (MSS)
DATA GENERAL NOVA-3/12 FORTRAN V
ROCKETSONDE PROGRAM

(ROCS 3)

ROCS 3

ABSTRACT

→ B. The MSS rocketsonde reduction procedure is designed for use with transponder sondes only, such as the PWN-10A. It consists of two programs, Pass 1 and Pass 2.

This document is divided into two self-contained sections.

Pass 1

Pass 1 of the MSS rocketsonde reduction procedure reduces the wind and temperature data recorded by the MSS realtime program. Output options and surface data are entered by the operator from the display console. This pass produces quality control data, constant altitude data, and two disk files.

Pass 2

Pass 2 of the MSS rocketsonde reduction procedure extracts the HAMDATA levels from the intermediate scratch file and the co-rawinsonde file. This pass uses the 1,000-meter constant altitude file and the intermediate scratch file to produce the ROCOB coded message.

↑

ROCS 3

PASS 1

B-5

1.0 Module Description

1.1 Main Routine

Initializes the various control and conversion constants, reads in rocket data from diskette to scratch file, and controls the flow of data through the subroutines.

1.2 Subroutine MIDINT

Computes the midpoint of altitude layers and calculates uncorrected component winds and fall rates for the layers between data points.

1.3 Subroutine BANDTC

Computes ballistic motion corrections for correcting winds according to Eddy (Reference 2 in Bibliography). Temperature corrections are computed as described in FMH 10, Section E of Appendix I.

1.4 Subroutine TWOKM

Smooths component wind data over 2-km thicknesses, producing 2-km mean thickness winds.

1.5 Subroutine SIMQ

Uses a least squares method of smoothing, providing a best fit of the components by generating a second degree polynomial equation in general form.

1.6 Subroutine PRESCOM

Converts geometric altitude to geopotential units, computes mean virtual temperature, and computes atmospheric pressure using a standard form of the hypsometric equation.

1.7 Subroutine ONEKILO

Rearranges data in a 1-km array and computes maximum altitude recorded by the sounding.

1.8 Subroutine OUTPUT

Computes pressure, density, and velocity of sound, and formats tabular data for output.

1.9 Subroutine PLOTCH

Formats temperature data for the printer; plots temperature versus altitude as an aid to quality control.

1.10 Subroutine COMXYZ

Computes X (east-west component), Y (north-south component), and Z (altitude) as well as an elevation angle correction for the Earth's curvature.

1.11 Subroutine GRAVITY

Computes the ratio of the station's acceleration of gravity to the acceleration of gravity at 45 degrees latitude, using the expression given at the top of Table 168, *Smithsonian Meteorological Tables*. List 1968.

1.12 Subroutine COMPRSR

Computes and tabulates the differences in temperatures from the co-rawinsonde observation and the rocketsonde observation in the overlap region.

1.13 Subroutine CHKOUT

Computes and tabulates the differences in the parameters between data levels as an aid to quality control.

1.14 Function IGETC

Retrieves a character from a word or an array of words.

1.15 Subroutine PUTC

Inserts a character in a word or an array of words.

1.16 Function WDIR

Computes wind direction in meteorological polar coordinate system.

1.17 Function WSPD

Computes windspeed using velocity components as input data.

1.18 Function VALUE

Interpolates for a value or sets missing data to nines.

2.0 MATHEMATICAL DESCRIPTION

2.1 Main Routine

None

2.2 Subroutine MIDINT

2.2.1 Computation of Mean Temperature of Two Adjacent Levels

$$TP = (T + TA)/2$$

where TP = mean temperature (degrees K)

T = temperature, upper level (degrees K)

TA = temperature, lower level (degrees K)

2.2.2 Computation of Mean Height of Two Adjacent Levels

$$H = (Z + ZA)/2$$

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where H = mean height (meters)
 Z = height, upper level (meters)
 ZA = height, lower level (meters)

2.2.3 Computation of Mean Time of Two Adjacent Levels

$$GG = (G + GA)/2$$

where GG = mean time (seconds after launch)
 G = time, upper level (seconds after launch)
 GA = time, lower level (seconds after launch)

2.2.4 Computation of East-West and North-South Velocity Components

$$V_X = (X - XA)/(GA - G)$$

$$V_Y = (Y - YA)/(GA - G)$$

where V_X = east-west velocity component (meters/second)
 V_Y = north-south velocity component (meters/second)
 X = east-west position component, upper level (meters)
 XA = east-west position component, lower level (meters)
 Y = north-south position component, upper level (meters)
 YA = north-south position component, lower level (meters)
 G = time, upper level (seconds after launch)
 GA = time, lower level (seconds after launch)

2.2.5 Computation of Fall Rate

$$V_Z = (ZA - Z)/(GA - G)$$

where V_Z = fall rate (meters/second)
 ZA = height, lower level (meters)
 Z = height, upper level (meters)
 GA = time, lower level (seconds after launch)
 G = time, upper level (seconds after launch)

2.3 Subroutine BANDTC

2.3.1 Computation of Local Acceleration of Gravity

$$Gr = GRAT \cdot 9.80616$$

where Gr = local acceleration of gravity

$GRAT$ = ratio of local acceleration of gravity to acceleration of gravity at 45 degrees latitude

9.80616 = acceleration of gravity at 45 degrees latitude

2.3.2 Correction of East-West and North-South Velocity Components

$$V_{XC} = V_{X2} - \frac{\{V_{Z2} \cdot [(V_{X3} - V_{X1})/(G_3 - G_1)]\}}{[(V_{Z3} - V_{Z1})/(G_3 - G_1)] + Gr}$$

$$V_{YC} = V_{Y2} - \frac{\{V_{Z2} \cdot [(V_{Y3} - V_{Y1})/(G_3 - G_1)]\}}{[(V_{Z3} - V_{Z1})/(G_3 - G_1)] + Gr}$$

where V_{XC} = corrected east-west velocity component

V_{YC} = corrected north-south velocity component

1 = upper level

2 = intermediate level

3 = lower level

V_X = east-west velocity component

V_Y = north-south velocity component

V_Z = vertical velocity

G = time after launch (seconds)

Gr = local acceleration of gravity

2.3.3 Computation of Ventilation Velocity

$$XX = X_{XC} - V_{X2}$$

$$YY = V_{YC} - V_{Y2}$$

$$v = \sqrt{V_{Z2}^2 + XX^2 + YY^2}$$

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where V = ventilation velocity

V_{X_C} = corrected east-west velocity component

V_{Y_C} = corrected north-south velocity component

V_{X_2} = east-west velocity component, intermediate level

V_{Y_2} = north-south velocity component, intermediate level

V_{Z_2} = vertical velocity, intermediate level

XX,YY = intermediate variables

2.3.4 Aerodynamic Heating Correction to Temperature

$$AA = K_1(Z) \cdot V^2$$

where AA = aerodynamic heating correction

Z = 20—70 kilometers

$K_1(Z)$ = aerodynamic heating term vs altitude (see paragraph 7.3)

V = ventilation velocity

2.3.5 Time Lag Correction to Temperature

$$AB = K_2(Z) \cdot [(T_3 - T_1)/G_3 - G_1]$$

where AB = time lag correction

Z = 20—70 kilometers

$K_2(Z)$ = time lag term vs altitude (see paragraph 7.3)

T_1 = temperature, upper level (degrees K)

T_3 = temperature, lower level, (degrees K)

G_1 = time, upper level (seconds after launch)

G_3 = time, lower level (seconds after launch)

2.3.6 Radiation Heat Loss Correction to Temperature

$$AD = K_3(Z) \cdot T_2^4$$

where AD = radiation heat loss correction

Z = 20—70 kilometers

$K_3(Z)$ = radiation heat loss term vs altitude (see paragraph 7.3)

T_2 = temperature, intermediate level (degrees K)

2.3.7 Radiation and Electrical Correction to Temperature

$AC = K_4(Z)$

where AC = radiation and electrical correction

Z = 20—70 kilometers

$K_4(Z)$ = radiation and electrical heating term vs altitude (variable between day and night; see paragraph 7.3)

2.3.8 Computation of Corrected Temperature

$T = T_2 - AA + AB - AC + AD$

where T = corrected temperature (degrees K)

T_2 = temperature, intermediate level (degrees K)

AA = aerodynamic heating correction

AB = time lag correction

AC = radiation and electrical correction

AD = radiation heat loss correction

2.4 Subroutine TWOKM

None

2.5 Subroutine SIMQ

None

2.6 Subroutine PRESCOM

2.6.1 Computation of Geopotential Height

$H = GRAT \cdot [(Re \cdot Z)/(Re + Z)]$

where H = geopotential height (meters)

$GRAT$ = ratio of local acceleration of gravity to acceleration of gravity at 45 degrees latitude

Re = mean radius of the Earth (meters)

Z = geometric height (meters)

2.6.2 Computation of Mean Virtual Temperature

$$TV = (T + T_P)/2$$

where TV = mean virtual temperature (degrees K)

T = temperature of the level (degrees K)

T_P = temperature, previous level (degrees K)

2.6.3 Computation of the Log of the Barometric Pressure

$$P = P_P - [(H - H_P)/(PC \cdot TV)]$$

where P = log of the barometric pressure

P_P = log of the barometric pressure, previous level

H = geopotential height of the level

H_P = geopotential height, previous level

PC = 67.442, a constant in the hypsometric equation when units are meters

TV = mean virtual temperature

2.7 Subroutine ONEKILO**2.7.1 Computation of Initial Output Height**

$$HS = [(HI/1000) \cdot 1000] + H_{INT}$$

where HS = initial output height (meters or feet)

HI = lowest input height (meters or feet)

H_{INT} = output interval

2.7.2 Computation of Interpolation Ratio

$$K = (HS - HB)/(HA - HB)$$

where K = interpolation ratio

HS = output level (meters or feet)

HA = upper level height (meters or feet)

HB = lower level height (meters or feet)

2.7.3 Interpolation for East-West Velocity Component, North-South Velocity Component, Temperature, Uncorrected Temperature, and Fall Rate

$$X = K \cdot (XA - XB) + XB$$

where X = parameter interpolated

K = interpolation ratio

XA = lower level parameter

XB = upper level parameter

2.7.4 Interpolation of the Log of Pressure

$$P = K \cdot (PA - PB) + PB$$

where P = interpolated log of pressure

K = interpolation ratio

PA = log of pressure, lower level

PB = log of pressure, upper level

2.8 Subroutine OUTPUT

2.8.1 Computation of Barometric Pressure

$$P = 10^{PL}$$

where P = barometric pressure (millibars)

PL = log of barometric pressure

2.8.3 Computation of Density

$$\rho = 348.38 \cdot (P/T)$$

where ρ = density, grams per cubic meter

P = barometric pressure, millibars

T = temperature, degrees Kelvin

348.38 = gas constant for dry air and conversion factors, with pressure in millibars and density in grams/cubic meter

2.8.3 Computation of Velocity of Sound

$$VS = 331.45 \cdot \sqrt{T/273.15}$$

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where VS = velocity of sound (meters/second)
 T = temperature (degrees K)
 273.15 = freezing point of water (degrees K)
 331.45 = velocity of sound at 273.15°K (meters/second)

2.8.4 Computation of Vertical Wind Shear

$$WS = \frac{\sqrt{(V_X - V_{XP})^2 + (V_Y - V_{YP})^2}}{HS - HSP}$$

where WS = vertical wind shear (/second)
 V_X = corrected east-west velocity component (meters/second)
 V_Y = corrected north-south velocity component (meters/second)
 V_{XP} = corrected east-west velocity component, previous level (meters/second)
 V_{YP} = corrected north-south velocity component, previous level (meters/second)
 HS = output height (meters)
 HSP = previous output height (meters)

2.9 Subroutine PLOTCH

None

2.10 Subroutine COMPHYZ

2.10.1 Conversion of Range to Meters

$$R = RR \cdot 0.9144$$

where R = range (meters)

$$RR = \text{range (yards)}$$

$$0.9144 = \text{meters in a yard}$$

2.10.2 Computation of Geometric Height

$$Z = \sqrt{[(Re + HA)^2 + R^2 + 2R \cdot (Re + HA) \cdot \sin \phi]} - Re$$

where Z = geometric height (meters)

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R_e = mean radius of the Earth (meters)

H_A = station height (meters)

R = slant range (meters)

ϕ = elevation angle

2.10.3 Correction of Elevation Angle for Earth's Curvature

$$\phi_C = \phi + \{[Z \cdot (\cos \phi / \sin \phi)] / 2.2 \cdot R_e\}$$

where ϕ_C = elevation angle corrected for the Earth's curvature

ϕ = elevation angle, uncorrected

Z = height (meters)

R_e = mean radius of the Earth (meters)

2.10.4 Computation of East-West and North-South Position Components

$$X = R \cdot \cos(\phi_C) \cdot \sin(\theta)$$

$$Y = R \cdot \cos(\phi_C) \cdot \cos(\theta)$$

where X = east-west position component

Y = north-south position component

R = slant range (meters)

ϕ_C = elevation angle corrected for the Earth's curvature

θ = azimuth angle

2.11 Subroutine GRAVITY

2.11.1 Computation of Ratio of Local Gravity to Gravity at 45° Latitude

$$GRAT = 1 - [0.0026373 \cdot \cos(2 \cdot LAT)] + \{0.0000059 \cdot [\cos(2 \cdot LAT)]^2\}$$

where $GRAT$ = ratio of local gravity to gravity at 45 degrees latitude

LAT = station latitude (degrees)

0.0026373 constants, *Smithsonian Meteorology Tables*, page 488,
0.0000059 equation 1, List 1951

2.12 Subroutine COMPRSR**2.12.1 Computation of Interpolation Ratio**

$$K = (ZA - Z)/(ZA - ZB)$$

where K = interpolation ratio

Z = desired output height

ZA = height of the upper level

ZB = height of the lower level

2.12.2 Interpolation for Temperature

$$T = K \cdot (TA - TB) + TB$$

where T = comparison temperature

K = interpolation ratio

TA = upper level temperature

TB = lower level temperature

2.12.3 Computation of Temperature Difference

$$DIFF = TRO - TRA$$

where $DIFF$ = temperature difference (degrees C)

TRO = rocketsonde temperature (degrees C)

TRA = rawinsonde temperature (degrees C)

2.13 Subroutine CHKOUT**2.13.1 Computation of Time Difference Between Levels in Fractional Parts of a Minute**

$$\Delta G = 60/(G - G1)$$

where ΔG = time difference

G = time, lower level (seconds after launch)

$G1$ = time, upper level (seconds after launch)

2.13.2 Computation of Azimuth, Elevation, Range, and Height Differences for Each Minute

$$\Delta\theta = (\theta - \theta_1) \cdot \Delta G$$

$$\Delta\phi = (\phi - \phi_1) \cdot \Delta G$$

$$\Delta R = (R - R_1) \cdot \Delta G$$

$$\Delta Z = (Z - Z_1) \cdot \Delta G$$

where $\Delta\theta$ = azimuth difference/minute

θ = azimuth, lower level

θ_1 = azimuth, upper level

ΔG = time difference between levels

$\Delta\phi$ = elevation difference/minute

ϕ = elevation, lower level

ϕ_1 = elevation, upper level

ΔR = range difference/minute

R = range, lower level

R_1 = range, upper level

ΔZ = height difference/minute

Z = height, lower level

Z_1 = height, upper level

2.14 Function IGETC

None

2.15 Subroutine PUTC

None

2.16 Function WDIR**2.16.1 Computation of Wind Direction**

$$D = \tan^{-1} (Y/X) \cdot 57.29578$$

If $X < 0$,

then $WDIR = 270 - D$

If $X > 0$,

then $WDIR = 90 - D$

If $X = 0$ and $Y \geq 0$

then $WDIR = 360$

If $X = 0$ and $Y < 0$

then $WDIR = 180$

where $WDIR$ = wind direction, meteorological polar coordinates

D = wind direction, Cartesian coordinates

X = east-west velocity vector

Y = north-south velocity vector

57.29578 = degrees in a radian

2.17 Function WSPD**2.17.1 Computation of Windspeed**

$$WSPD = \sqrt{X^2 + Y^2}$$

where $WSPD$ = windspeed

X = east-west velocity vector

Y = north-south velocity vector

2.18 Function VALUE

None

3.0 INPUT

Raw data input is from the floppy disk which has been recorded and smoothed by the realtime system. Options are input in conversational mode from the display console. The co-rawinsonde data input is from the floppy disk output of the rawinsonde reduction program.

ROCS 3

Header Record

Words	Contents
1—5	Flight identification (10 characters)
6	Encoded sonde type
7	Number of points smoothing
8	Smoothed data output rate
9	Hard-copy option
10	Hard-copy output rate
11	Scrolled data output rate
12—13	Station altitude (feet)
14—15	Station temperature (degrees C)
16—17	Station pressure (millibars)
18—20	Sonde identification (6 characters)
21—23	Channel 1 identification (6 characters)
24—25	Calibration constant 1 for channel 1
26—27	Calibration constant 2 for channel 1
28—29	Calibration constant 3 for channel 1
30—32	Channel 3 identification (6 characters)
33—34	Calibration constant 1 for channel 3
35—36	Calibration constant 2 for channel 3
37—38	Calibration constant 3 for channel 3
39—40	Calibration constant for channel 2
41	Hygistor selection
42—89	Temperature log calculation table
90—137	Temperature ratio calculation table
138—140	Q9 sonde identification (6 characters)
141—142	Q9 baseline temperature ordinate
143—144	Q9 baseline relative humidity
145—146	Q9 baseline temperature (degrees C)
147	Q9 hygistor selection
148	Flight date
149—152	Flight starting time (hours, minutes, seconds, tenths of seconds)
153	Number of blocks written
154—256	Unused (zeros)

ROCS 3

Data Record

Data records are packed with eight 32-word records into one 256-word block.

Word	Contents
1	Software status word
2	Time (tenths of seconds)
3	Hardware status word 1
4	Hardware status word 2
5—6	X position of instrument (yards)
7—8	Y position of instrument (yards)
9—10	Z position of instrument (yards)
11—12	Slant range (yards)
13—14	Ground range (yards)
15—16	Altitude (yards above MSL)
17—18	Azimuth (degrees from true north)
19—20	Elevation (degrees)
21—22	Temperature channel 1 (degrees C)
23—24	Temperature channel 2 (degrees C)
25—26	Temperature channel 3 (degrees C)
27—32	Unused (zeros)

Sample Options Dialogue

Prompt	Operator Input
WAS THIS A NIGHT LAUNCH (YES/NO)	NO
OUTPUT TO CONSOLE OR PRINTER (CNS/PRT)	PRT
ENTER STATION ID FROM M.D.G.	01
WHAT IS THE FIRST GOOD TIME	192

Co-rawinsonde Data Format

Control File

Word	Contents
1	Units switch (feet/meters)
2	Winds in feet/second switch
3	Interpolation switch
4	Output device indicator

ROCS 3

Control File (Continued)

Words	Contents
5	Optical index of refraction units switch
6	Wind shear in knots switch
7—8	Surface wind x component
9—10	Surface wind y component
11—12	Surface wind direction
13—14	Surface windspeed
15	Station number
16	Day
17	Month
18	Year
19—20	Altitude increment (meters)
21	Release time
22—23	Tropopause wind direction (degrees from true north)
24—25	Tropopause time (seconds)
26—27	Tropopause geopotential height (meters)
28—29	Tropopause dewpoint (degrees C)
30—31	Tropopause geometric height (meters)
32—33	Tropopause refractive index (optical/N)
34—35	Tropopause pressure (millibars)
36—37	Tropopause temperature (degrees C)
38—39	Tropopause relative humidity (percent)
40—41	Tropopause windspeed (meters/second)
42—45	Station latitude (double precision) (degrees)
46—47	Termination height (geometric meters)
48—49	Termination pressure (millibars)
50—54	Flight identification
55	Sonde type

Significant File

Words	Contents
1—2	Altitude (meters, geometric)
3	Wind direction (degrees)
4	Windspeed (meters/second)
5—6	Temperature (degrees C)
7—8	Dewpoint (degrees C)
9—10	Pressure (millibars)
11—12	Refractive index (N units)
13—14	Relative humidity (percent)

ROCS 3

Mandatory File

Words	Contents
1—2	Altitude (meters, geopotential)
3	Wind direction (degrees)
4	Windspeed (meters/second)
5—6	Temperature (degrees C)
7—8	Dewpoint (degrees C)
9—10	Pressure (millibars)
11—12	Relative humidity (percent)

Tabulation File

Words	Contents
1—2	Altitude (meters, geometric)
3—4	Wind direction (degrees)
5—6	Windspeed (meters/second)
7—8	Temperature (degrees C)
9—10	Dewpoint (degrees C)
11—12	Pressure (millibars)
13—14	Relative humidity (percent)
15—16	Absolute humidity (grams/cubic meter)
17—18	Density (grams/cubic meter)
19—20	Index of refraction (N)
21—22	Velocity of sound (meters/second)
23—24	Shear velocity (seconds ⁻¹)
25—26	Vapor pressure (millibars)
27—28	Precipitable water (millimeters)

4.0 OUTPUT

The output is in two forms. One is quality control outputs to the printer for use by the operator. The second is constant altitude data in kilometers, 250-meter intervals, and thousands of feet.

The quality control outputs are as follows:

Data Comparison by Level

Time	Seconds after midnight
Azimuth	Degrees from true north
Elevation	Degrees from horizontal
Slant Range	Meters from tracker
Height	Meters above ground level

ROCS 3

Data Comparison by Level (Continued)

Hour	Hour of the data level (local)
Minute	Minute of the data level (local)
Seconds	Second of the data level (local)
Time Difference	Seconds between data levels
Azimuth Difference	Degrees/minute between levels
Elevation Difference	Degrees/minute between levels
Slant Range Difference	Meters/minute between levels
Altitude Difference	Meters/minute between levels

Temperature Comparison — Rocketsonde Vs Rawinsonde

Altitude	Meters
Rocketsonde Temperature	Degrees Celsius
Rawinsonde Temperature	Degrees Celsius
Temperature Difference	Degrees Celsius

The scratch file is as follows:

Words	Contents
1—2	Altitude, meters
3—4	East-west velocity component, meters/second
5—6	North-south velocity component, meters/second
7—8	Uncorrected east-west velocity component, meters/second
9—10	Uncorrected north-south velocity component, meters/second
11—12	Temperature (degrees K)
13—14	Uncorrected temperature (degrees K)
15—16	Barometric pressure (millibars)
17—18	Fall rate, meters/second

Constant Altitude Data

Height	Geometric feet or meters at standard intervals of 1 km, 250 meters, and 1,000 feet
Wind Direction	In degrees from true north. Missing data is shown as 999
Windspeed	In knots or meters/second; calm is 000 and missing is 999
Temperature	In degrees Kelvin
Temperature Correction	In degrees Kelvin
Atmospheric Pressure	Millibars
Atmospheric Density	Grams/cubic meter
Fall Rate	In feet/second or meters/second (determined by height units)
Speed of Sound	In knots or meters/second (determined by height units)
Wind Shear	Seconds ⁻¹

ROCS 3

Sample Options Dialogue

Prompt	Operator Input
Output to console or printer (CNS/PRT)	PRT

Plot of Temperature Vs Altitude

Altitude	Meters
Temperature	Degrees Kelvin

Constant Altitude Data

Height	Geometric feet or meters at standard intervals of 1 km, 250 meters, and 1,000 feet
Wind Direction	In degrees from true north. Missing data is shown as 999
Windspeed	In knots or meters/second; calm is 000 and missing is 999
Temperature	In degrees Kelvin
Temperature Correction	In degrees Kelvin
Atmospheric Pressure	Millibars
Atmospheric Density	Grams/cubic meter
Fall Rate	In feet/second or meters/second (determined by height units)
Speed of Sound	In knots or meters/second (determined by height units)
Wind Shear	Seconds ⁻¹

A scratch file is output to diskette for Pass 2 of the program. This data is as follows:

Words	Contents
1—2	Altitude (meters)
3—4	East-west velocity component (meters/second)
5—6	North-south velocity component (meters/second)
7—8	Uncorrected east-west velocity component (meters/second)
9—10	Uncorrected north-south velocity component (meters/second)
11—12	Temperature (degrees K)
13—14	Uncorrected temperature (degrees K)
15—16	Barometric pressure (millibars)
17—18	Fall rate (meters/second)

AD-A163 634

IRIG STANDARDS FOR RANGE METEOROLOGICAL DATA REDUCTION
PART 2 ROCKETSONDE(U) RANGE COMMANDERS COUNCIL WHITE
SANDS MISSILE RANGE NM INTER-R. DEC 85

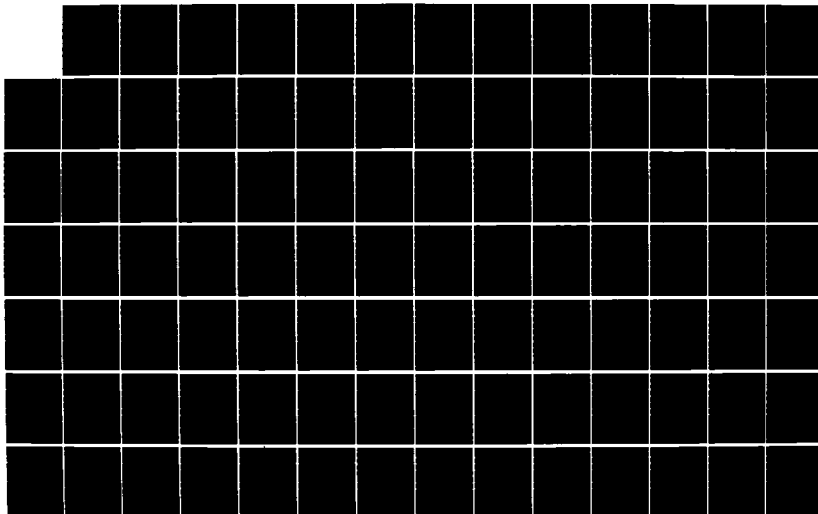
3/3

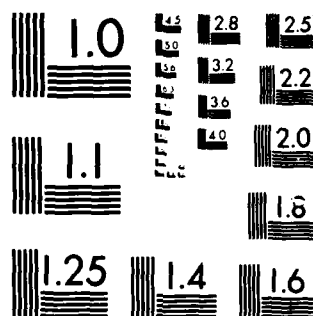
UNCLASSIFIED

IRIG-STANDARD-352-85-PT-2

F/G 4/1

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

5.0 ALGORITHMS

5.1 Subroutine TWOKM

Set up values that are to be used when calling SIMQ by multiplying elements of the matrix and assigning to proper place in symmetric coefficient matrix [A].

$$AX_{(I,J)} = XA_{(I,J)} + XC_{(K,I)} \cdot SC_{(K,J)}$$

$$AY_{(I,J)} = YA_{(I,J)} + YC_{(K,I)} \cdot YC_{(K,J)}$$

Set up values that are to be used when calling SIMQ by multiplying elements of the matrix and assigning to proper place in constant vector matrix [B].

$$BX_I = XB_I + XC_{(K,I)} \cdot XK$$

$$BY_I = YB_I + YC_{(K,I)} \cdot YK$$

Using the coefficients returned from SIMQ, calculate a smoothed X and Y

$$SX = a^2XB_1 + aXB_2 + XB_3$$

$$SY = a^2YB_1 + aYB_2 + YB_3$$

where $a = 5$

XB = coefficients returned from SIMQ

SX = smoothed east-west component

SY = smoothed north-south component

5.2 Subroutine SIMQ

The least squares method provides a best fit of the components by generating a second degree polynomial equation, of general form

$$y = k_2x^2 + k_1x + k_0$$

and computing an offset from the center of the 9- point range. Two matrixes are created, designated [A] and [B]. Symmetric coefficient matrix [A] is

$$[A] = \begin{bmatrix} N & \Sigma X_i & \Sigma X_i^2 \\ \Sigma X_i & \Sigma X_i^2 & \Sigma X_i^3 \\ \Sigma X_i^2 & \Sigma X_i^3 & \Sigma X_i^4 \end{bmatrix}$$

ROCS 3

and constant vector matrix [B] is

$$[B] = \begin{bmatrix} \Sigma Y_i \\ \Sigma X_i Y_i \\ \Sigma X_i^2 Y_i \end{bmatrix}$$

Note: Σ indicates summation from 1 to N; N = 9.

Basic matrix equation $[A] [K] = [B]$ is solved by finding the inverse of $[A]$, $[A]^{-1}$, and performing multiplications:

$$[A]^{-1} [A] [K] = [A]^{-1} [B]$$

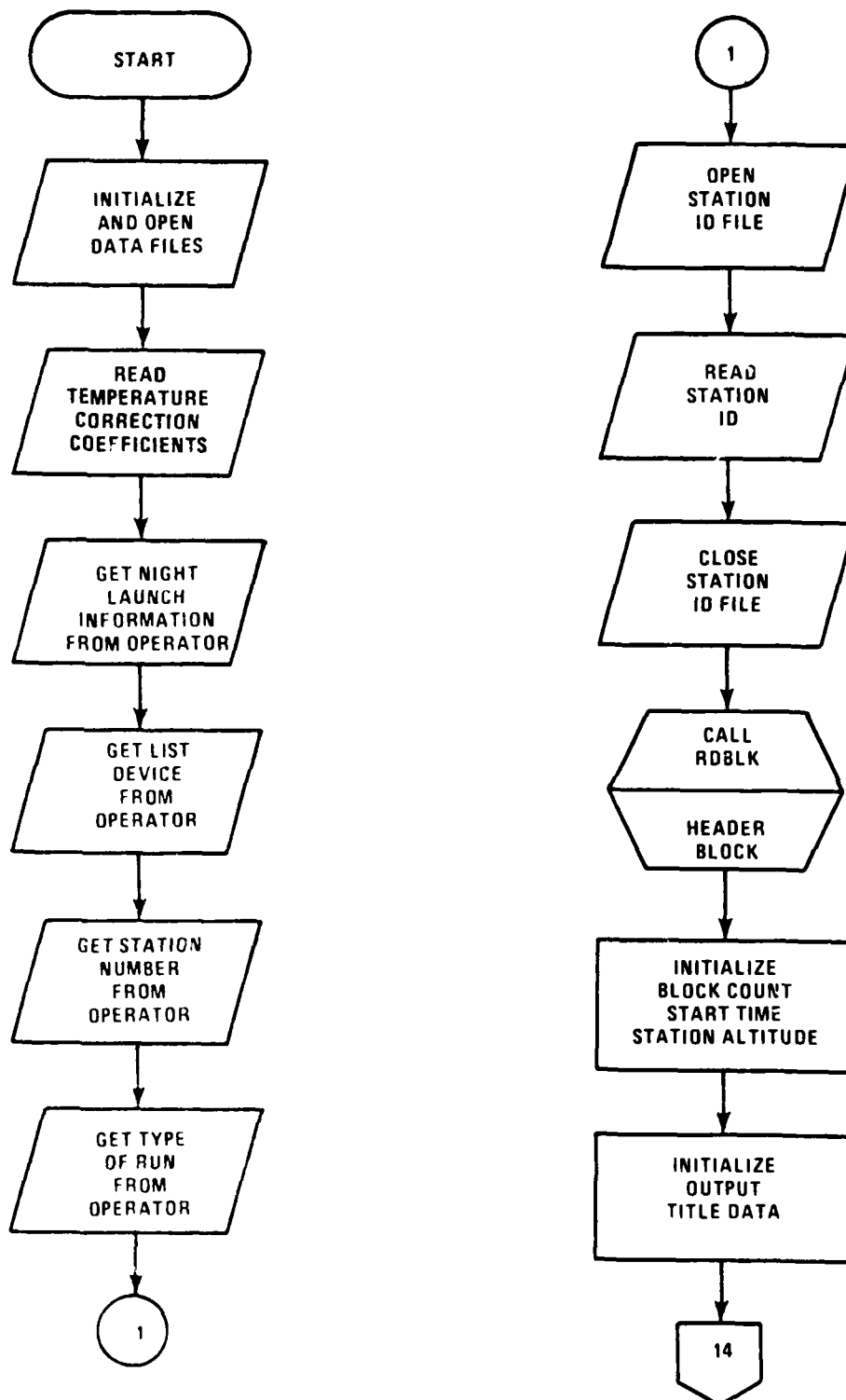
$$[I] [K] = [A]^{-1} [B]$$

$[A]^{-1}$ is calculated by SIMQ using the Gauss-Jordan inplace matrix inversion method. SIMQ returns the appropriate coefficients k_2 , k_1 , and k_0 , which the calling routine incorporates in calculating the appropriate values.

6.0 FLOWCHARTS

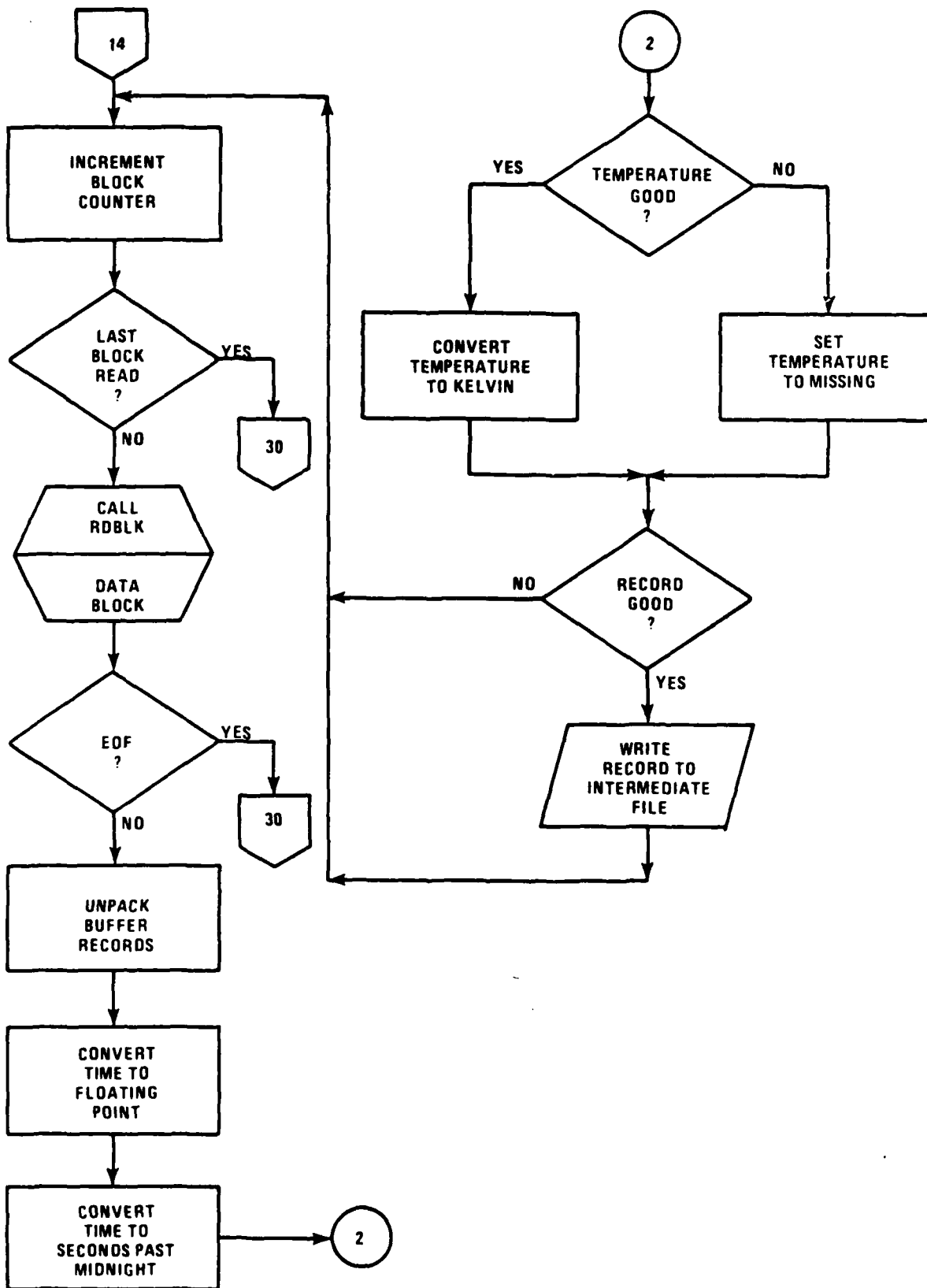
See the following pages.

6.1.1 Main Routine - Pass 1



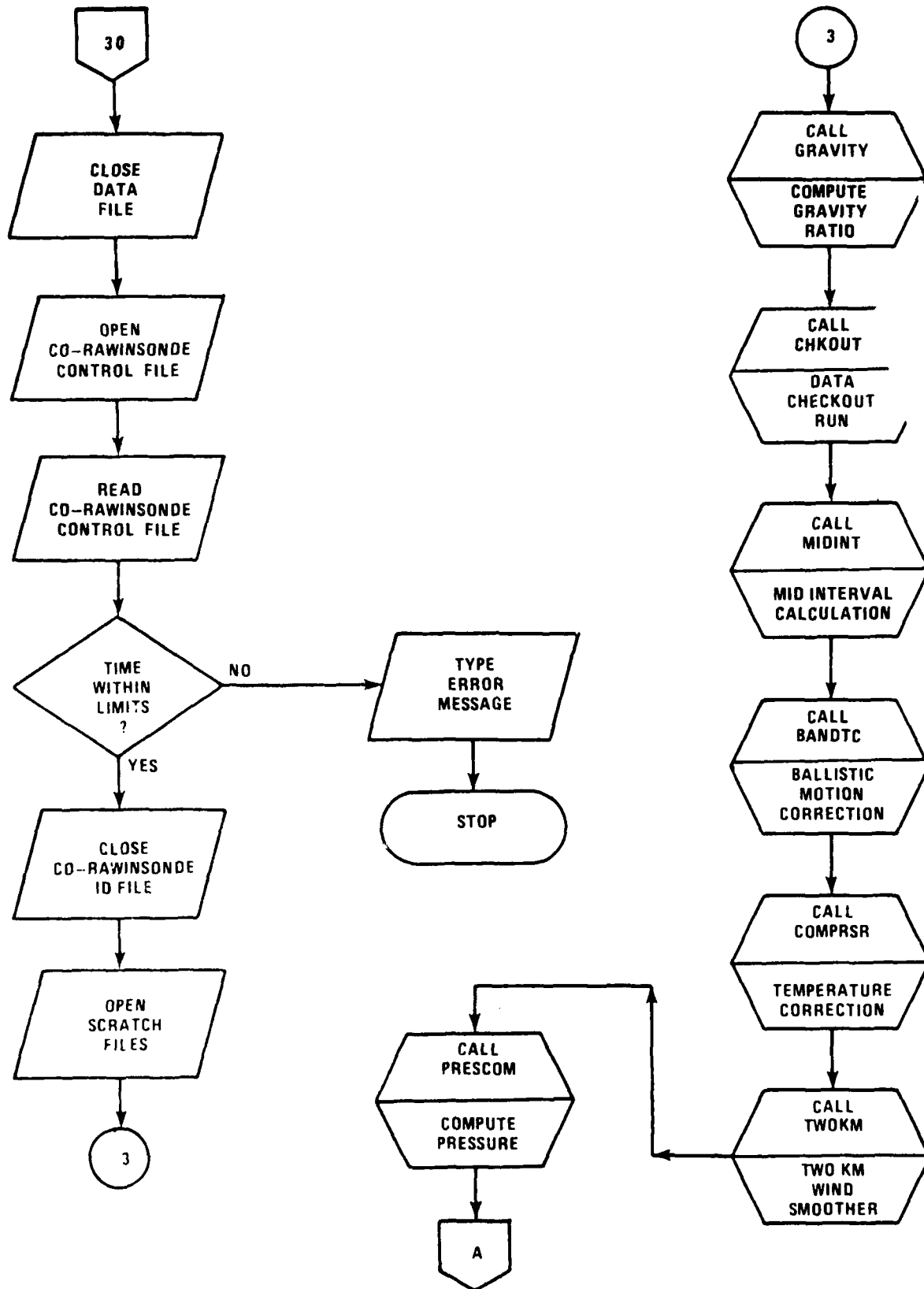
ROCS 3

6.1.2 Main Routine - Pass 1

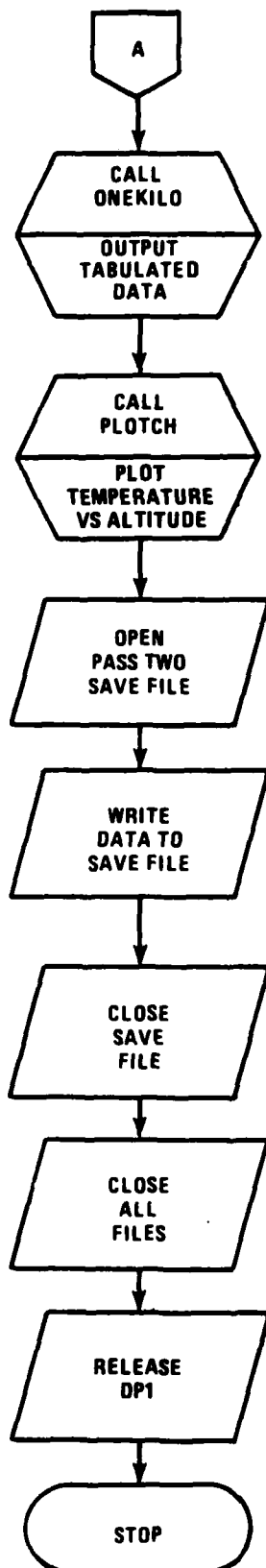


ROCS 2

6.1.3 Main Routine - Pass 1

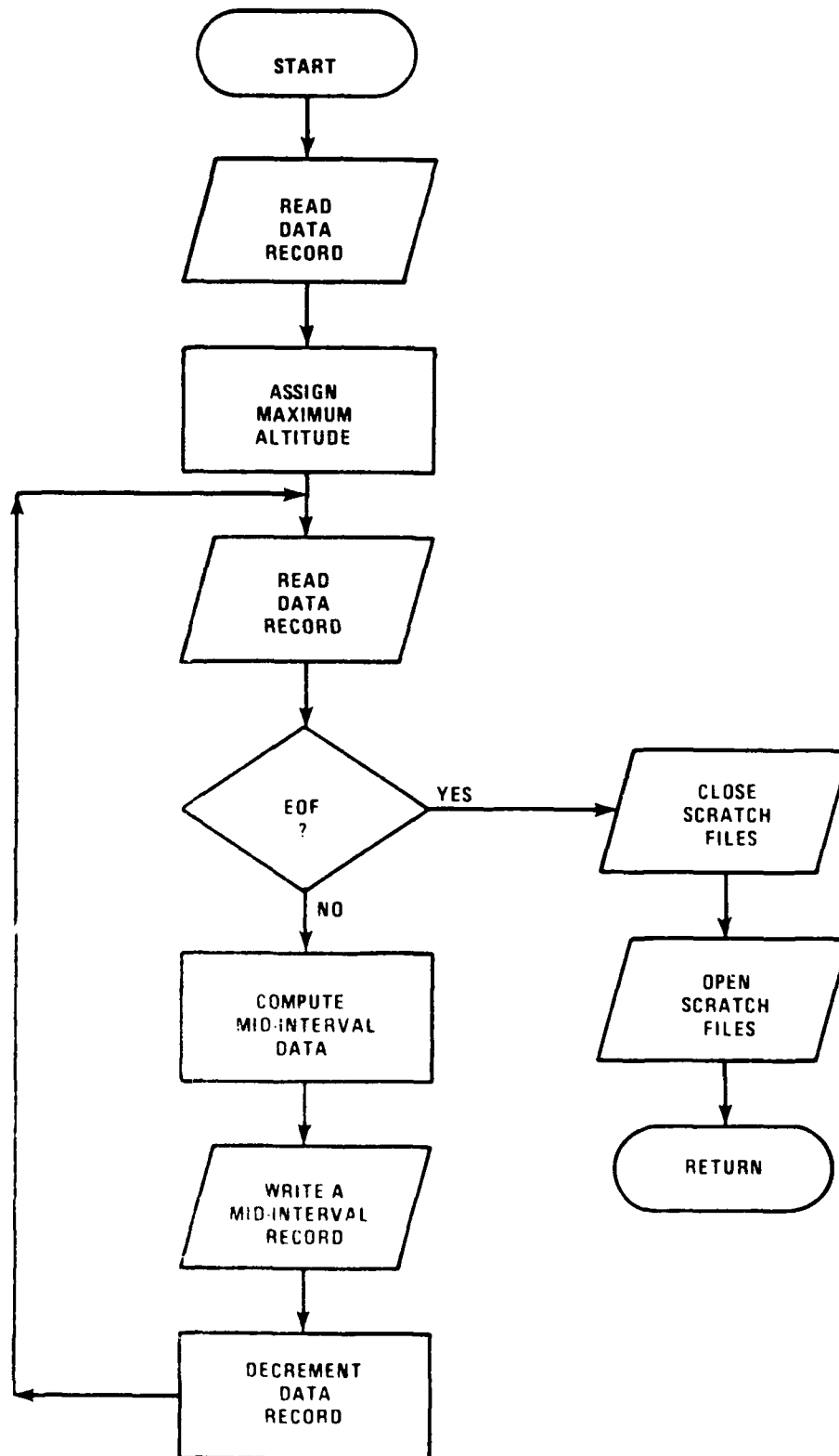


6.1.4 Main Routine - Pass 1

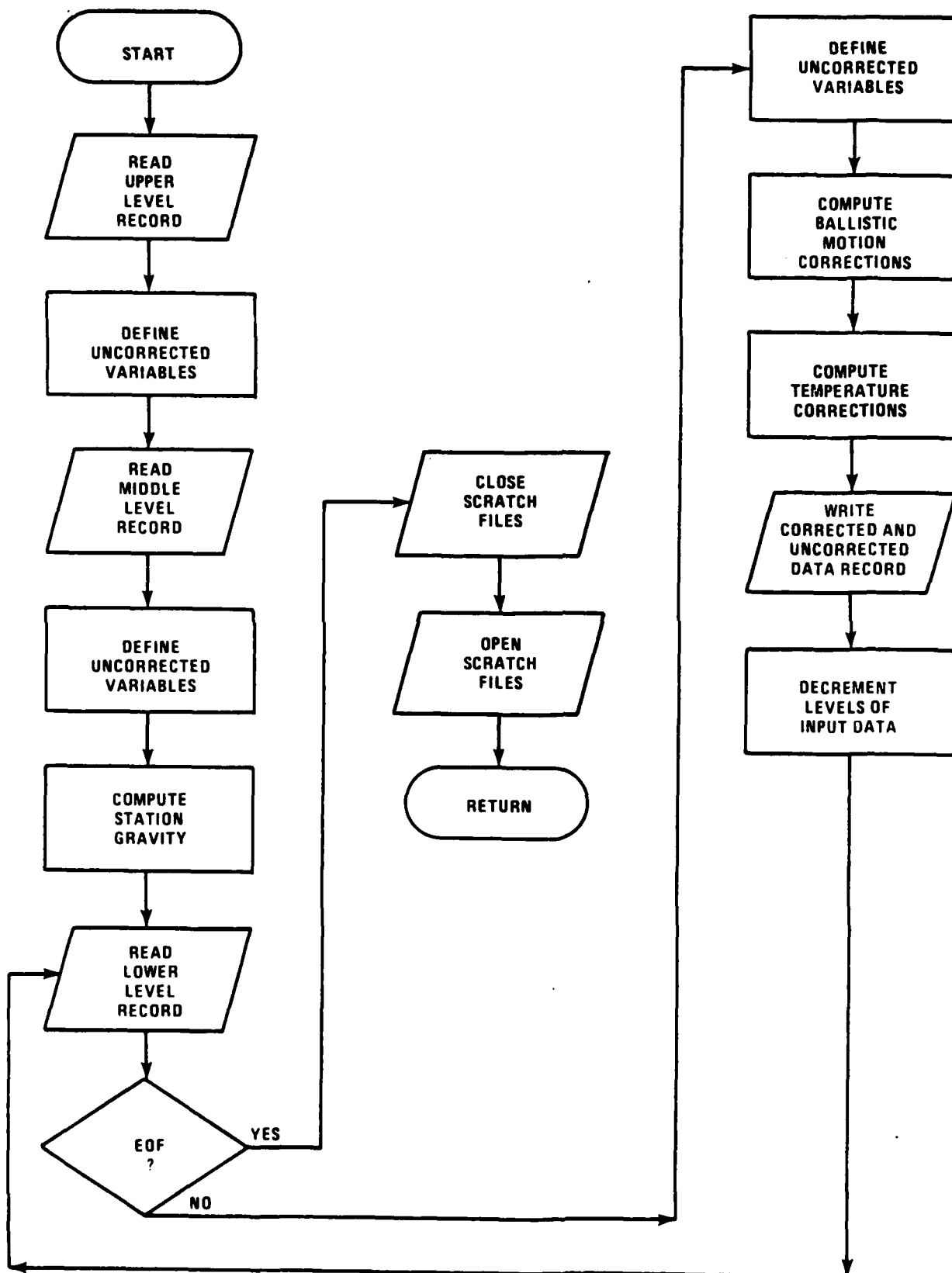


ROCS 3

6.2 Subroutine MIDINT

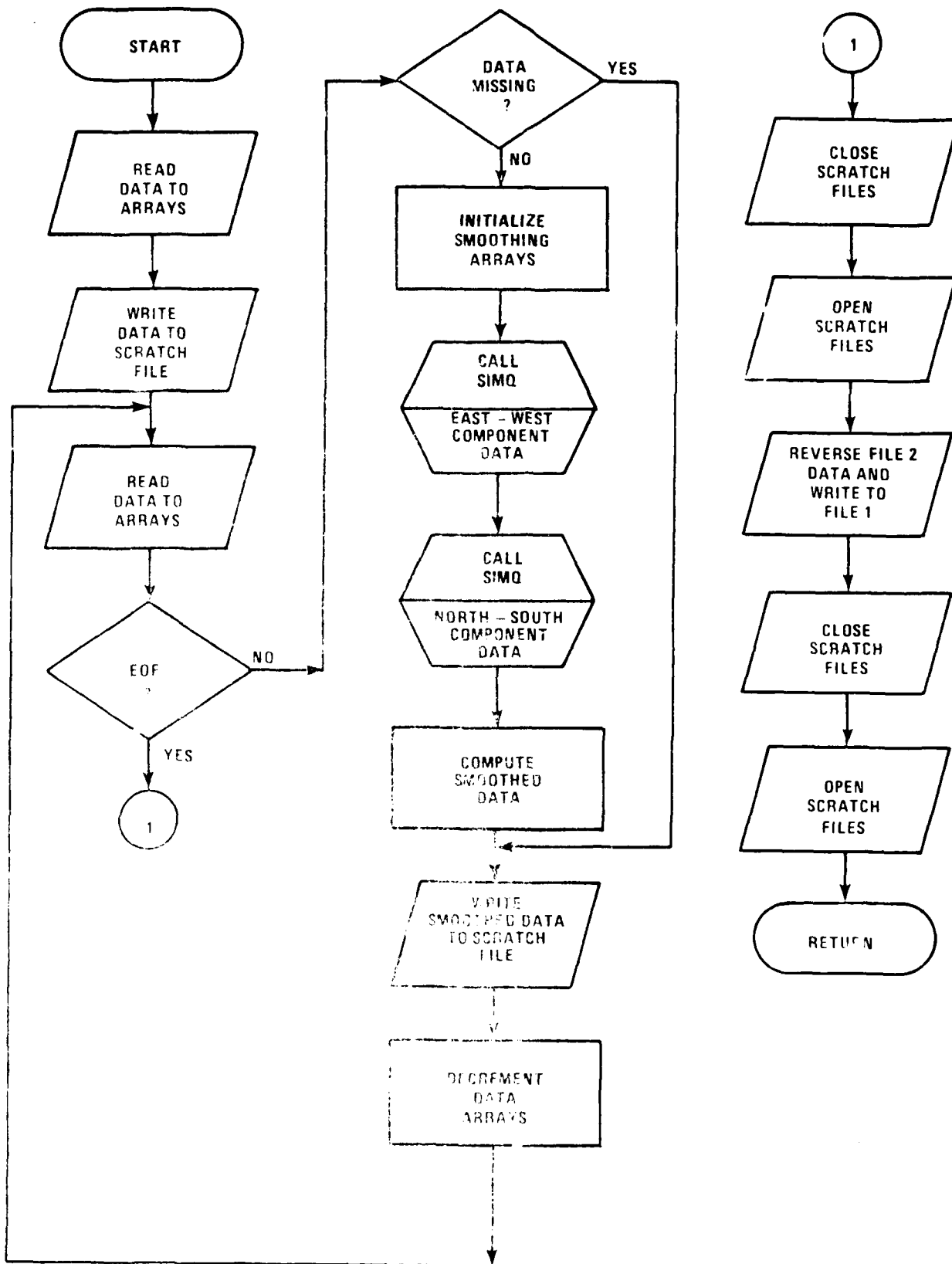


6.3 Subroutine BANDTC

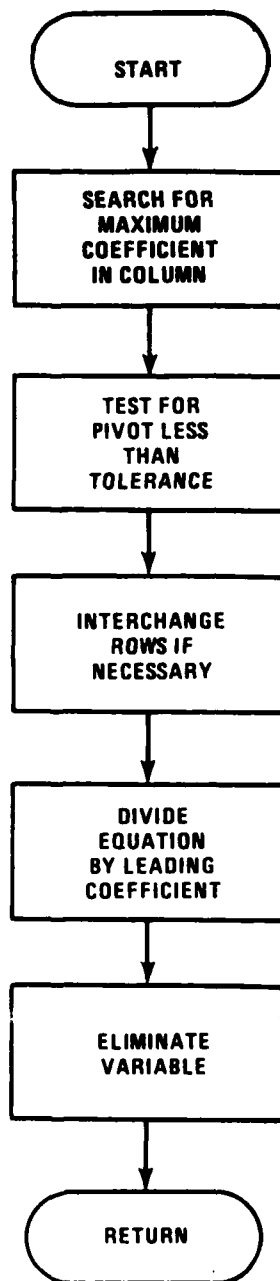


ROCS 3

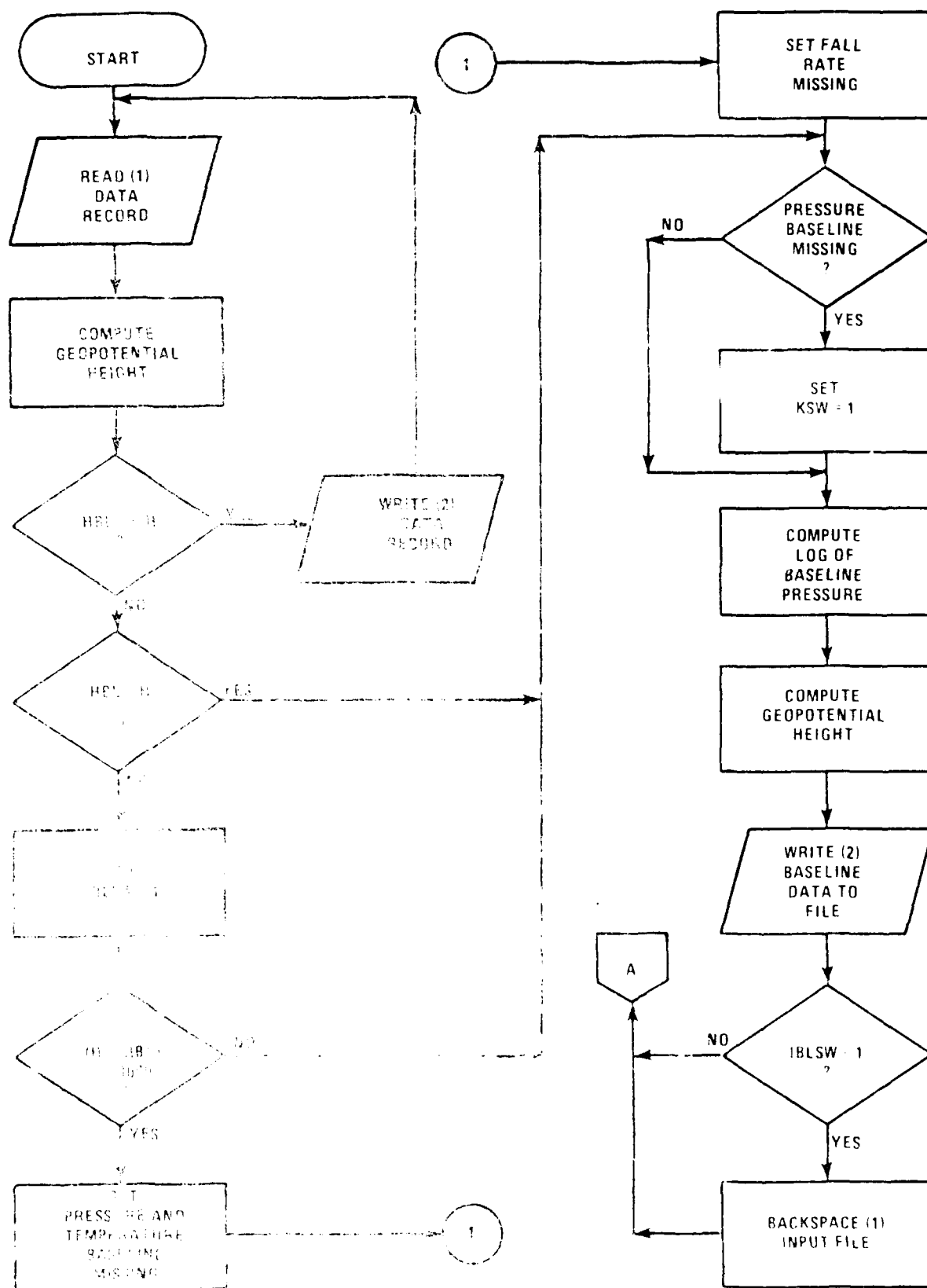
6.4 Subroutine TWOKM



6.5 Subroutine SIMQ

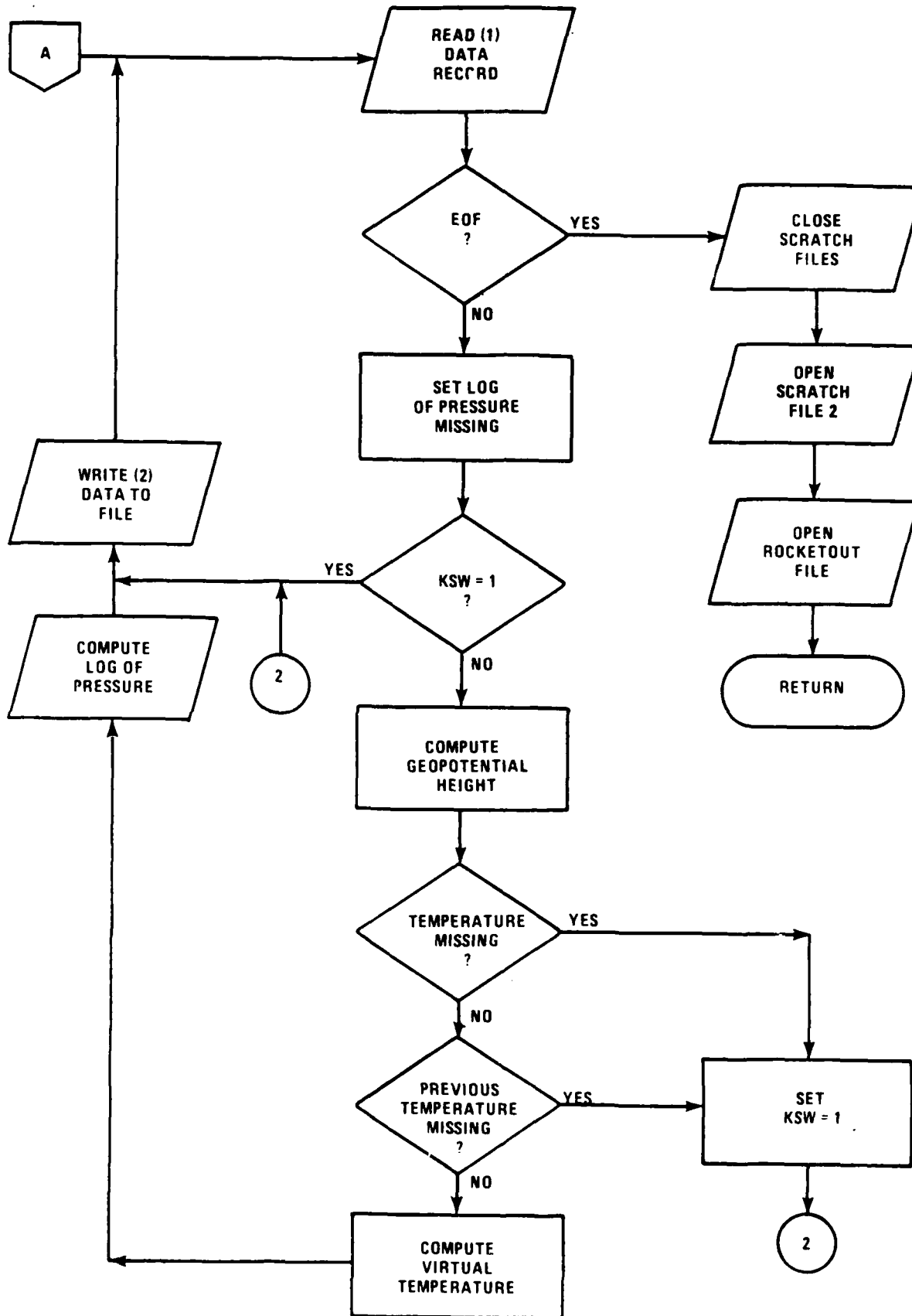


6.6.1 Subroutine PRESCOM

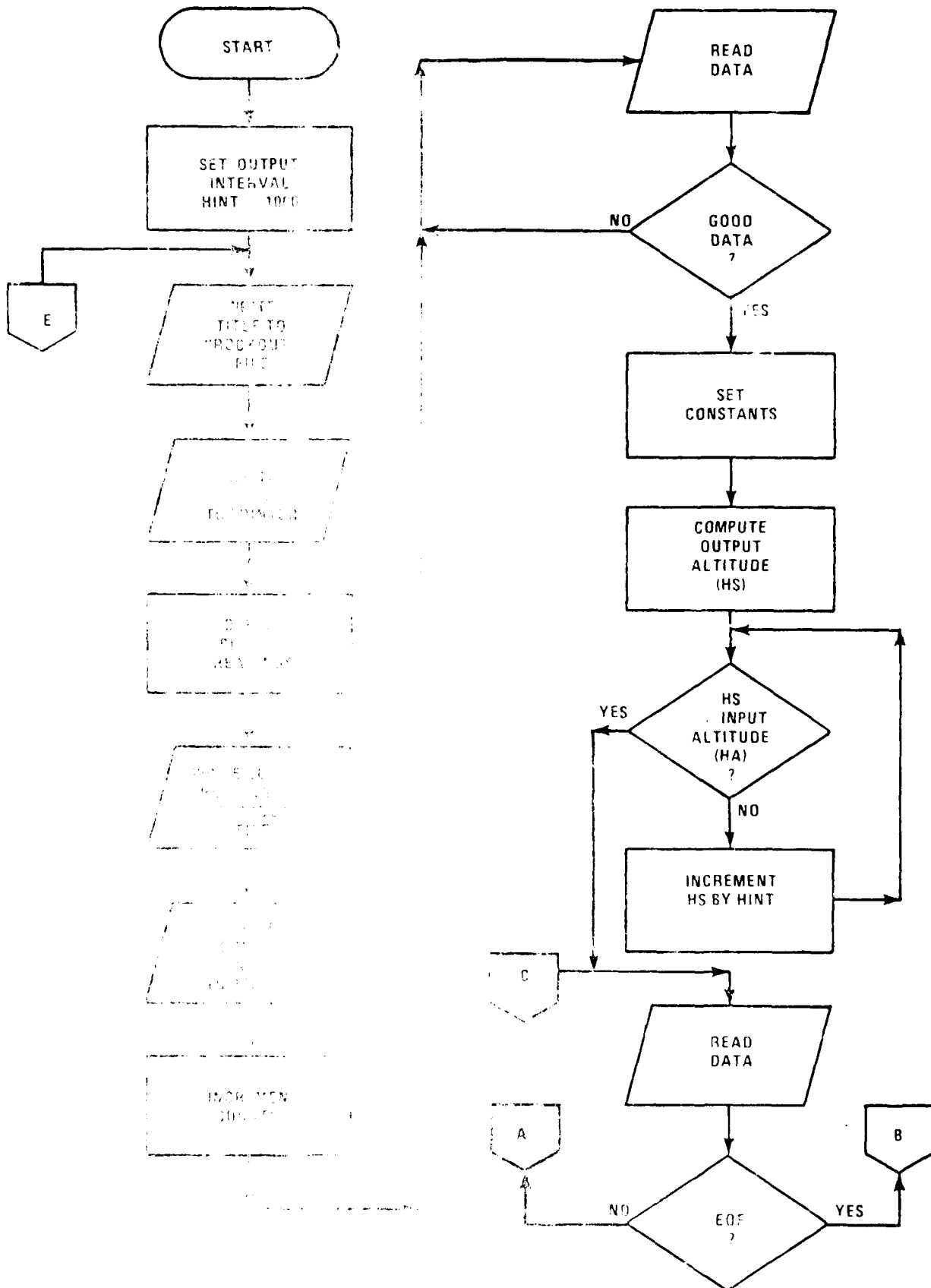


ROCS 3

6.6.2 Subroutine PRESCOM

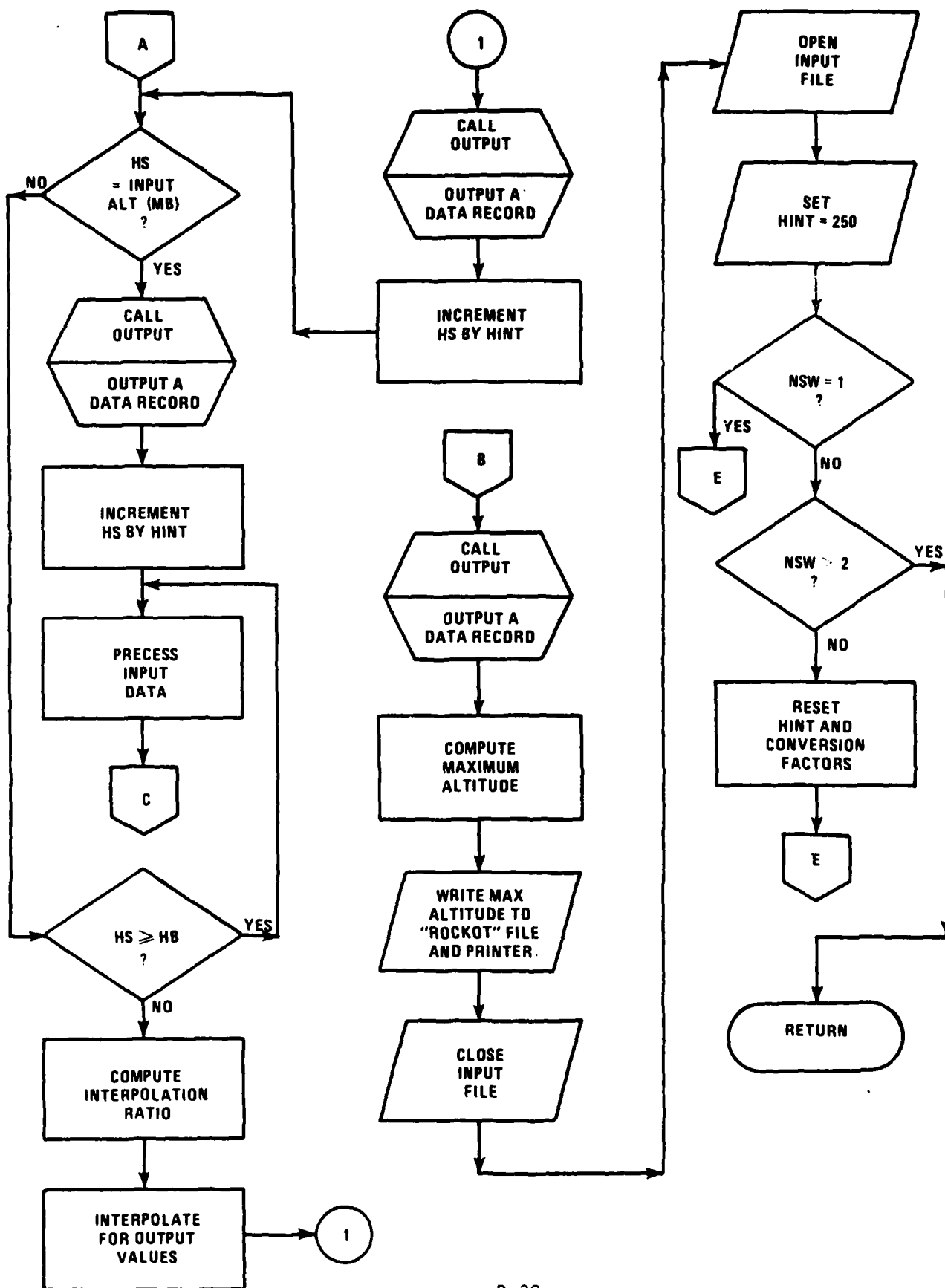


6.7.1 Subroutine ONEKILO

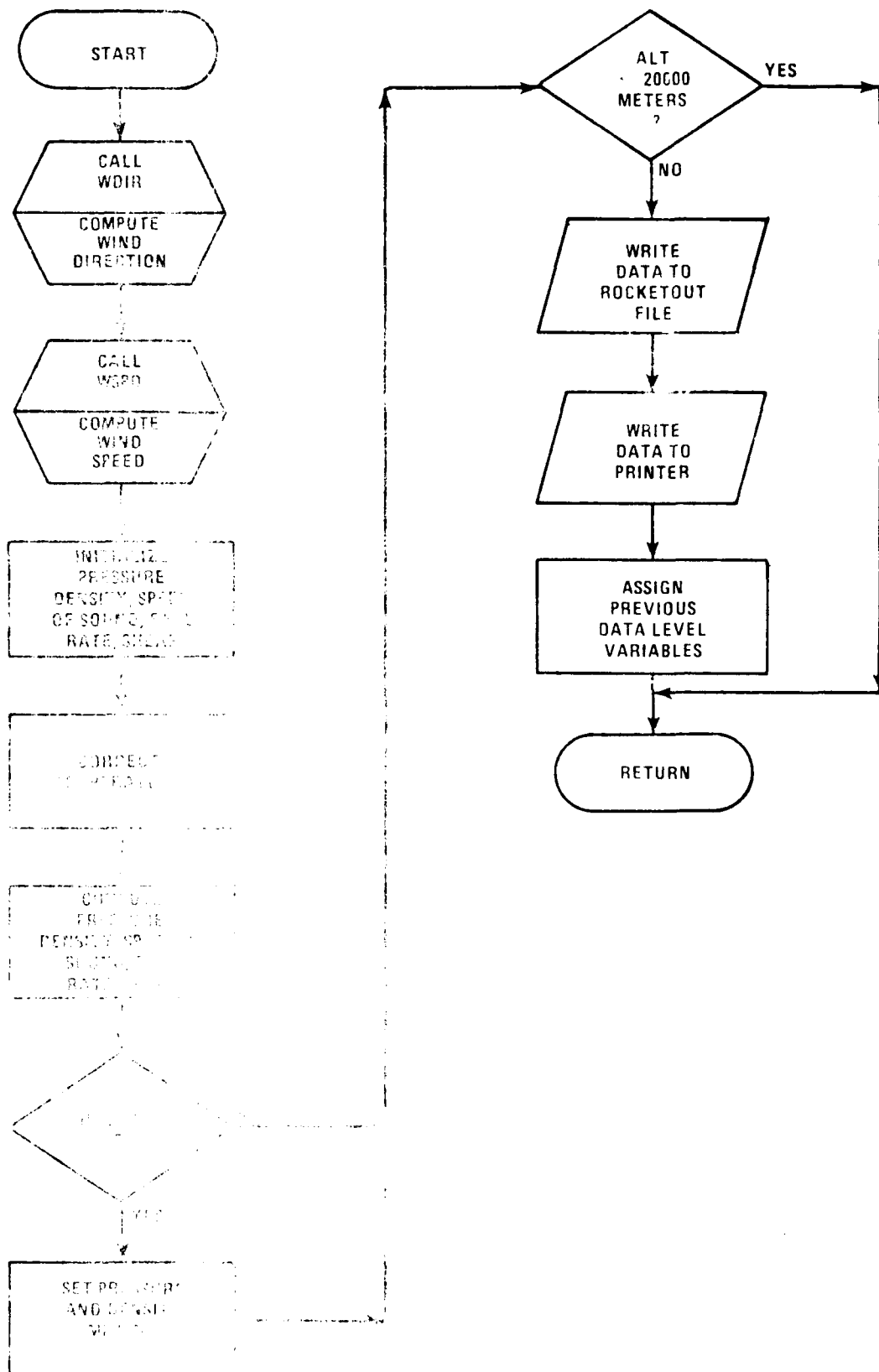


ROCS 3

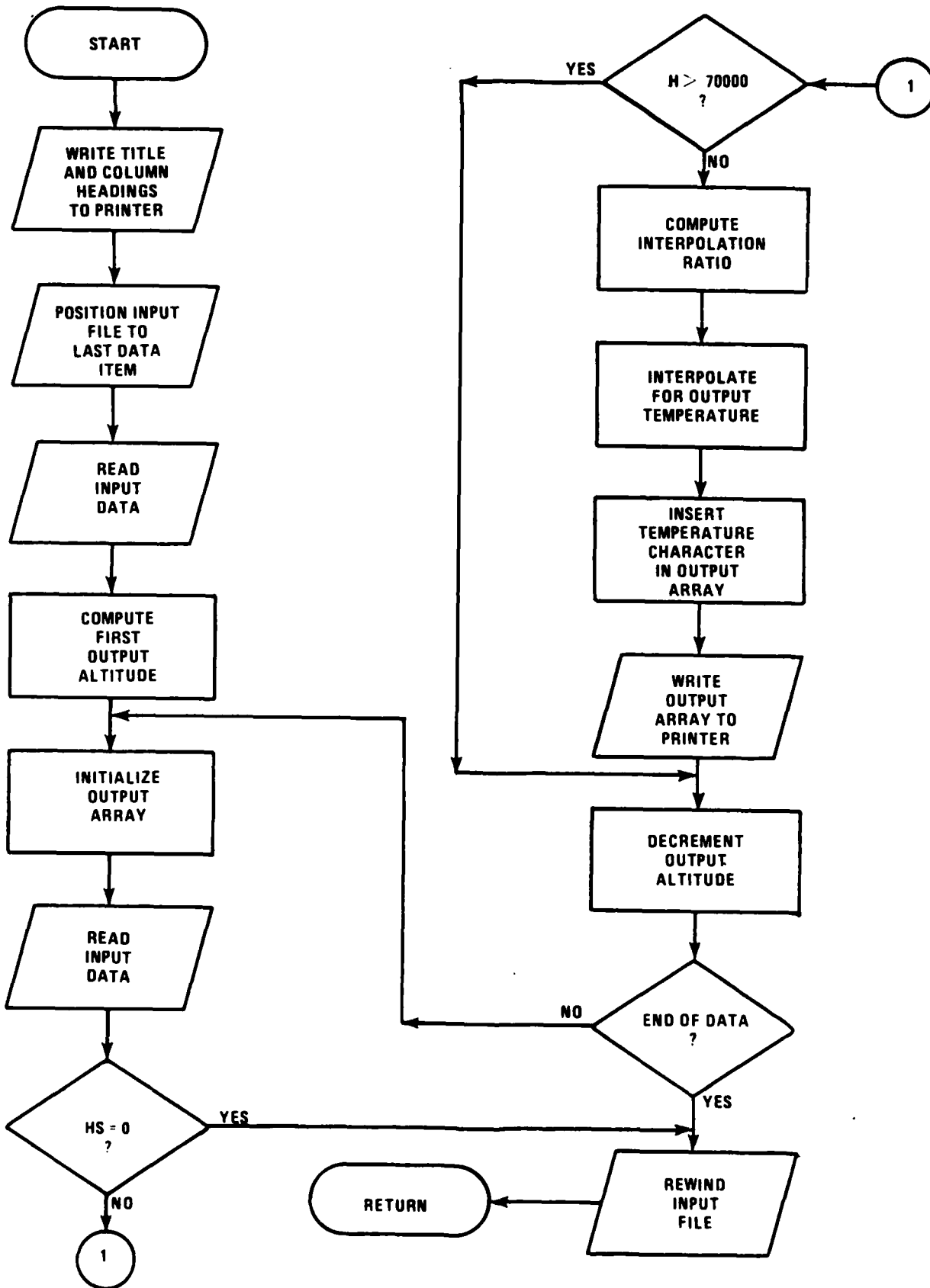
6.7.2 Subroutine ONEKILO



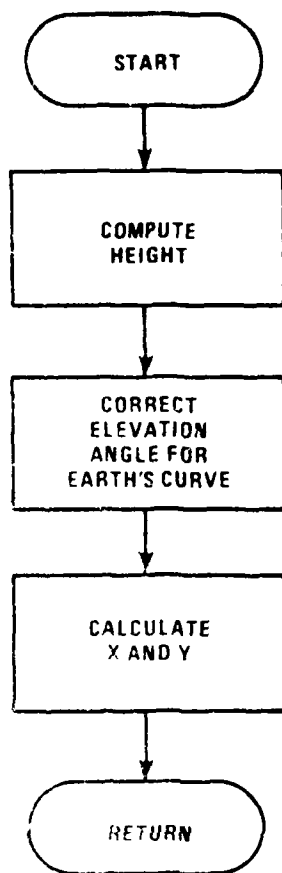
6.8 Subroutine OUTPUT



6.9 Subroutine PLOTCH

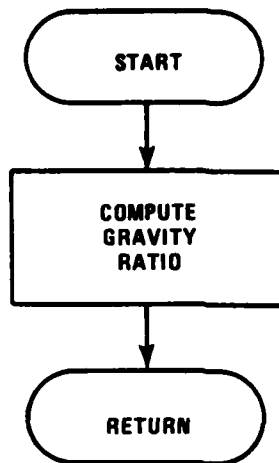


6.10 Subroutine COMPXYZ

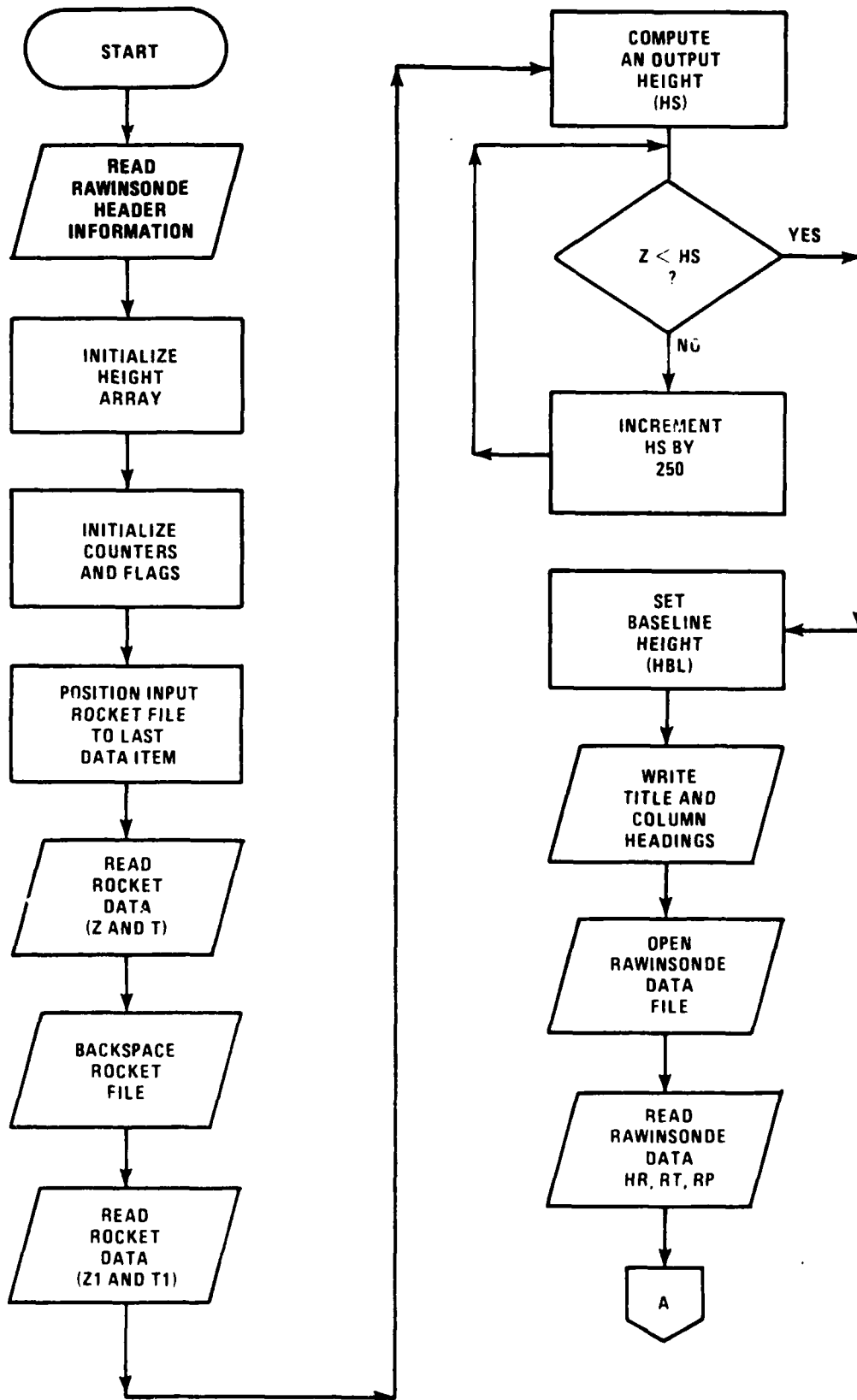


ROCS 3

6.11 Subroutine GRAVITY

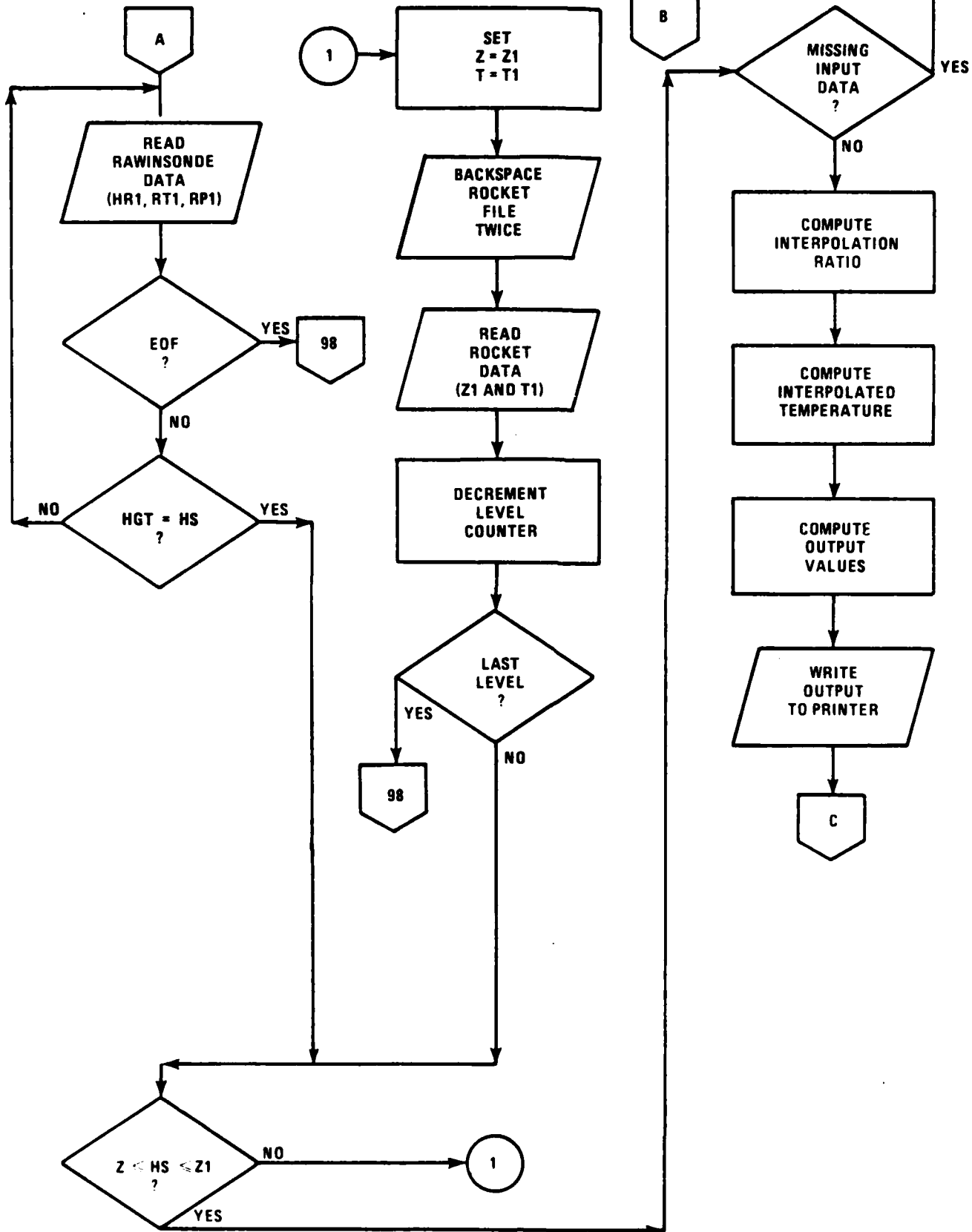


6.12.1 Subroutine COMPRSR

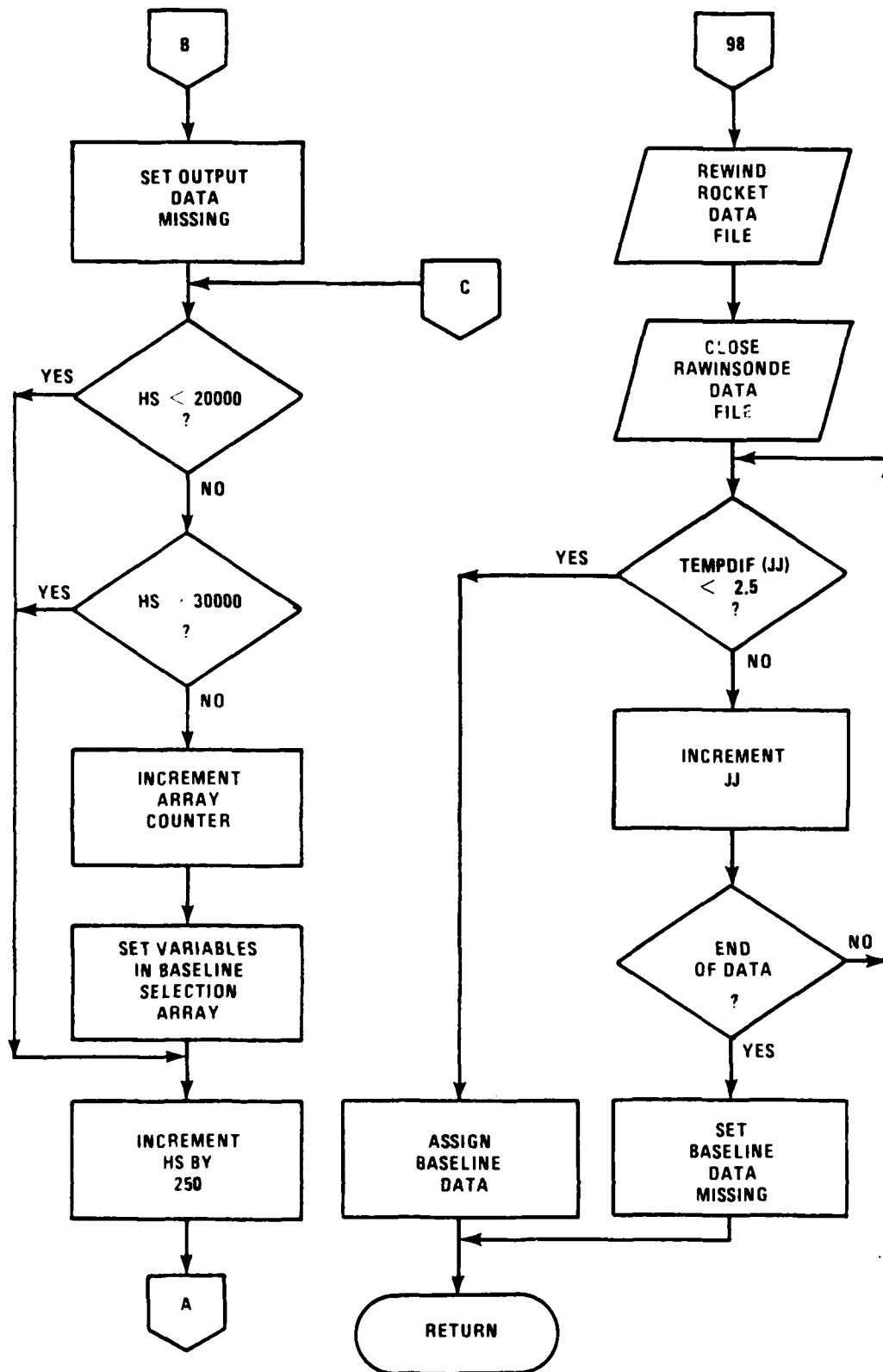


ROCS 2

6.12.2 Subroutine COMPRSR

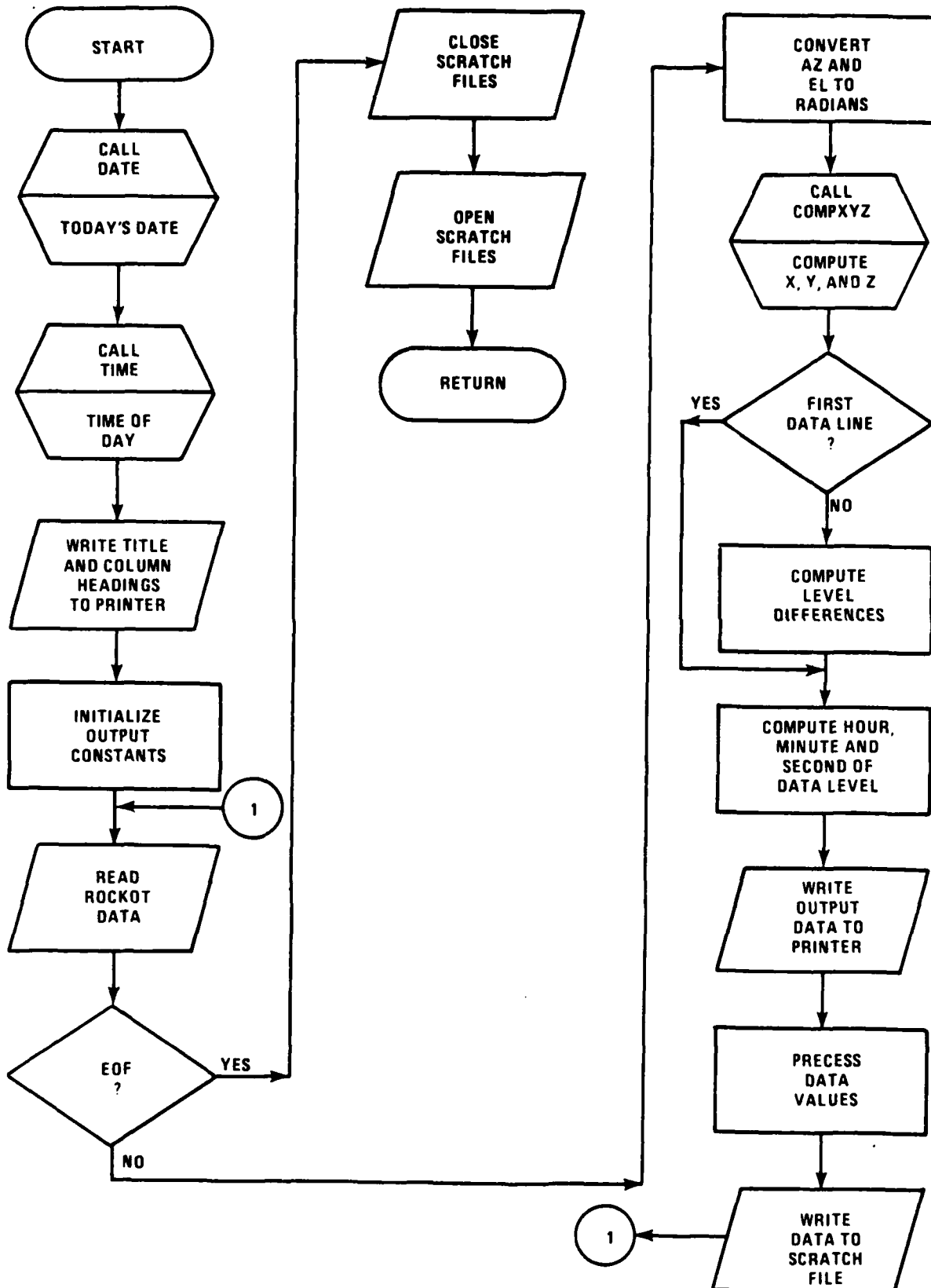


6.12.3 Subroutine COMPRSR

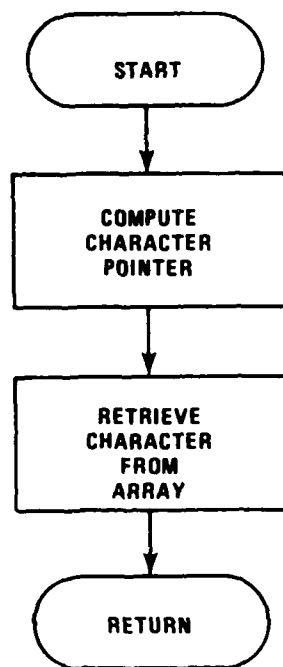


ROCS 3

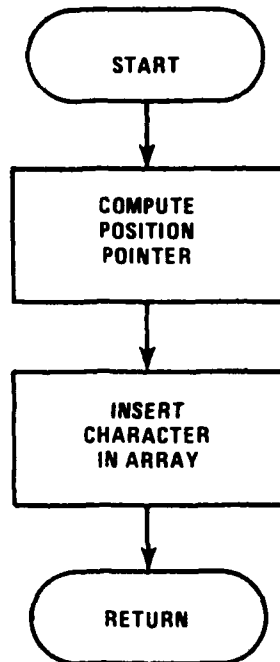
6.13 Subroutine CHKOUT



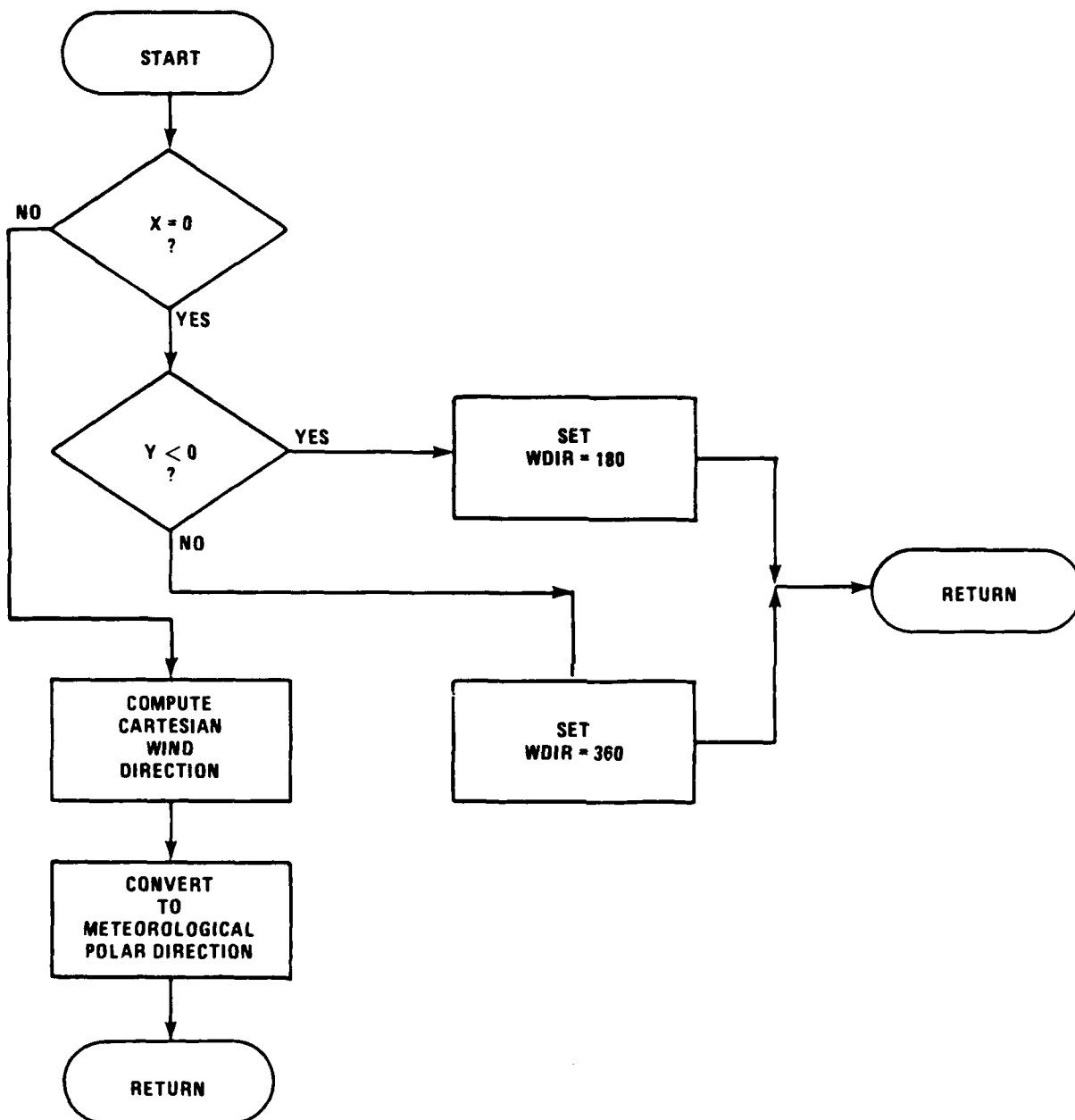
6.14 Function IGETC



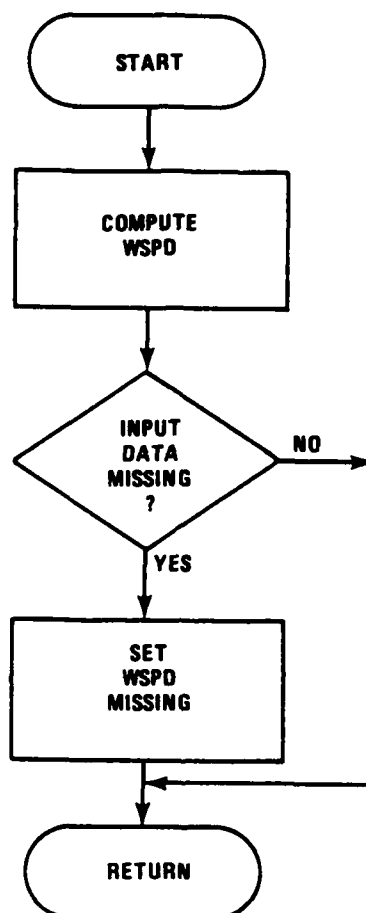
6.15 Subroutine PUTC



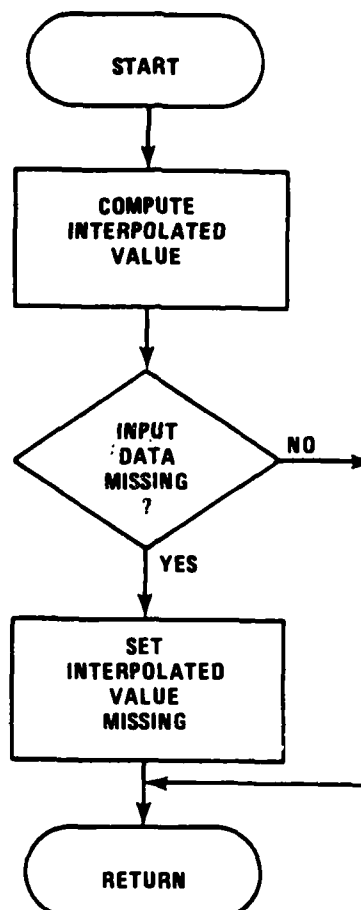
6.16 Function WDIR



6.17 Function WSPD



6.18 Function VALUE



ROCS 3

7.0 MATHEMATICAL AND PHYSICAL CONSTANTS

7.1 Main Routine

57.29578	Degrees in a radian
67.442	Constant in hypsometric equation, <i>Smithsonian Meteorological Tables</i> , List 1968
6371229.315	Mean radius of the Earth, meters
65536	2^{16} , maximum number in 16 bits + 1
3600	Seconds in an hour
60	Seconds in a minute
273.15	Freezing point of water, degrees K

7.2 Subroutine MIDINT

None

7.3 Subroutine BANDTC

9.80616	Acceleration of gravity at 45 degrees latitude, meters/second ²
---------	--

TABLE 1

The following table lists values of K_1 , K_2 , K_3 , and K_4 versus altitude for the 10-mil bead thermistor using a loop mount.

Z (m)	K_1 $\left(\frac{s^2 \text{ } ^\circ K}{m^2}\right)$	K_2 (s)	K_3 $\left(\frac{1}{^\circ K^3}\right)$	K_4 ($^\circ K$)	
				Day	Night
70 x 10 ³	4.65 x 10 ⁻⁴	12.77	18.51 x 10 ⁻¹⁰	23.2	7.56
69	4.65	10.60	14.63	18.4	6.04
68	4.64	8.92	11.83	15.0	4.93
67	4.64	7.70	9.80	12.5	4.13
66	4.63	6.69	8.18	10.4	3.48
65	4.62	5.93	6.98	8.94	3.00
64	4.61	5.27	5.98	7.70	2.59
63	4.59	4.72	5.17	6.69	2.26
62	4.57	4.27	4.53	5.87	2.00
61	4.55	3.84	3.93	5.13	1.75
60	4.52	3.51	3.49	4.57	1.57
59	4.50	3.23	3.12	4.10	1.41

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TABLE 1 (Continued)

Z (m)	K_1 $\left(\frac{s^2 \text{ } ^\circ K}{m^2}\right)$	K^2 (s)	K_3 $\left(\frac{1}{^\circ K^3}\right)$	K_4 ($^\circ K$)	
				Day	Night
58 x 10 ³	4.48 x 10 ⁻⁴	2.95	2.78 x 10 ⁻¹⁰	3.66	1.27
57	4.46	2.72	2.49	3.29	1.15
56	4.44	2.51	2.24	2.98	1.04
55	4.43	2.342	2.05	2.73	0.956
54	4.42	2.148	1.87	2.51	0.880
53	4.41	2.053	1.74	2.33	0.820
52	4.40	1.935	1.62	2.17	0.766
51	4.40	1.828	1.51	2.03	0.718
50	4.39	1.728	1.41	1.90	0.673
49	4.39	1.627	1.31	1.77	0.629
48	4.39	1.545	1.23	1.67	0.592
47	4.39	1.469	1.16	1.57	0.559
46	4.40	1.393	1.09	1.48	0.528
45	4.41	1.330	1.03	1.40	0.500
44	4.41	1.271	9.76 x 10 ⁻¹¹	1.33	0.476
43	4.42	1.212	9.24	1.26	0.452
42	4.42	1.160	8.79	1.20	0.430
41	4.43	1.111	8.35	1.14	0.410
40	4.43	1.065	7.95	1.09	0.392
39	4.44	1.019	7.53	1.03	0.372
38	4.44	0.978	7.18	0.986	0.355
37	4.45	0.940	6.85	0.943	0.341
36	4.45	0.903	6.52	0.897	0.323
35	4.46	0.868	6.22	0.858	0.311
34	4.46	0.837	5.96	0.822	0.298
33	4.47	0.804	5.68	0.785	0.285
32	4.47	0.776	5.44	0.753	0.274
31	4.48	0.749	5.22	0.722	0.263
30	4.49	0.724	5.00	0.694	0.253
29	4.49	0.700	4.79	0.666	0.243
28	4.50	0.677	4.60	0.640	0.235
27	4.50	0.656	4.42	0.615	0.225
26	4.51	0.635	4.25	0.593	0.218
25	4.52	0.616	4.09	0.572	0.210
24	4.52	0.597	3.94	0.551	0.203
23	4.52	0.580	3.81	0.533	0.197
22	4.53	0.565	3.69	0.518	0.191
21	4.54	0.550	3.58	0.502	0.185
20	4.55	0.535	3.47	0.487	0.180

ROCS 3

7.4 Subroutine TWOKM

None

7.5 Subroutine SIMQ

None

7.6 Subroutine PRESCOM

None

7.7 Subroutine ONEKILO

1000 Output interval, meters and feet

250 Output interval, meters

7.8 Subroutine OUTPUT

348.38 Gas constant for dry air with pressure in millibars and density in grams/cubic meter, combined with conversion factors

331.45 Speed of sound at zero degree Celsius, meters/second

273.15 Freezing point of water, degrees K

7.9 Subroutine PLOTCH

1000 Output interval, meters

70000 Maximum output altitude

7.10 Subroutine COMPXYZ

0.9144 Meters/yard

2.2 Constant used in correcting elevation angle for the Earth's curvature

7.11 Subroutine GRAVITY

57.29578 Degrees in a radian

0.0026373 Gravity ratio constants from *Smithsonian Meteorological Tables*,
0.0000059 page 488, equation 1, List 1951

7.12 Subroutine COMPRSR

0.3048 Conversion factor for meters to feet

273.15 Freezing point of water, degrees K

8.0 BIBLIOGRAPHY

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2. Eddy, et al., "Determination of Winds from Meteorological Rocketsondes," University of Texas Report Number 2, University of Texas, November 1965.
3. Henry, R. M., Paper presented to the American Meteorological Society Conference on "High Altitude Meteorology Atmosphere Space Weather," Houston, Texas, 27-31 March 1967.
4. Krumins, M. V. and Lyons, W. C., "Corrections for the Upper Atmosphere Temperatures Using a Thin Film Loop Mount," NOLTR 72-152, Naval Ordnance Laboratory, 22 June 1972.
5. Luers, J. K., "A Method of Computing Wind Density, Temperature, Pressure and Their Associated Errors from the High Altitude Robin Sphere Using an Optimum Filter," AFCRL-70-0366, July 1970. Final report on AFCRL Contract with the University of Dayton Research Institute.
6. Gustafson, A. F., "The Error in Rawin Computations Due to Neglecting the Earth's Curvature," Bull., AMS, Vol. 35, No. 7, pp. 295-300, September 1954.

ROCS 3

ATTACHMENT 1
INPUT DATA FILE, DUMP AND BINARY

PASS 1

B-57

TEST NUMBER: 000000 ASCENT NUMBER: 4029 SONDE TYPE: 101
 NUMBER IN LINE: 150 SMOOTHED OUTPUT RATE: 15
 HARGREY OPTION: BOTH HARGREY OUTPUT RATE: 15 SMOOTHED OUTPUT RATE: 10
 STATION ALTITUDE: 16.50 IN PRESSURE: .0 STATION TEMPERATURE: .0
 MSS SONDE ID: 4566 CHANNEL 1 ID: 4566 CHANNEL 3 ID: 4566
 SAMSUN COEFFICIENTS: A R C
 CHANNEL 1: -5.16500 2123.50000 60.20499
 CHANNEL 2: -5.16500 2123.50000 60.20499
 HYDRISTON SELECTION: 13 R33: .000

ALU2: DATA
 .30103 .60206 .77815 .90308 .99999 1.17600
 1.30100 1.47710 1.69890 1.84500 1.90300 1.95420
 1.99990 2.17600 2.30100 2.47710 2.60200 2.77810
 2.90300 3.01000 3.17600 3.30100 3.47710 3.60200
 3.77810 3.90300 4.00000 4.00000 4.00000 4.00000

RATIO DATA
 .93516 .91877 .90308 .88778 .87312 .85852
 .80689 .75078 .66027 .59099 .56187 .53613
 .51256 .42336 .36372 .28865 .24349 .19185
 .16296 .14466 .11877 .07530 .00000 .00000
 AN/680-2 SONDE ID: 151877 FOR 25.0 ELI 25.0 ICI 25.0 HYDRISTON SEL: 13
 RELEASE DATE: 1/18/84 RELEASE TIME: 15:15:34: 0 BLOCKS WRITTEN: 15

[illegible]

R0CS 3

TABLE 1-1

SURF TIME	HANDW STATUS	HANDW STATUS	X	Y	SLANT RANGE	GROUND RANGE	ALTITUDE	AZ	EL	TEMP1	RH	TEMP2
001170	1500	004312	002041	64037.96	17340.14	32034.11	73672.75	66343.81	32353.45	74.85	25.77	46.5
001170	1530	004312	002041	65089.79	17521.93	31734.85	74503.37	67406.62	32064.34	74.93	25.21	45.4
001170	1540	004312	002041	66201.87	17680.59	31437.02	75386.31	68318.75	31777.30	75.06	24.65	47.1
001170	1550	004312	002041	67197.75	17781.00	31258.12	76214.25	69509.31	31608.18	75.18	24.21	46.1
001170	1600	004312	002041	68306.25	18132.48	30755.15	77022.37	70598.25	31156.12	75.12	23.57	46.3
001170	1610	004312	002041	69187.00	18396.13	30576.25	77846.75	71590.56	30947.30	75.11	23.13	46.7
001170	1620	004312	002041	70193.50	18839.54	30255.33	78723.25	72679.44	30637.61	74.98	22.60	47.4
001170	1630	004312	002041	71231.00	19050.36	29994.22	79601.31	73734.19	30387.54	75.03	22.14	49.3
001170	1640	004312	002041	72216.00	19303.59	29723.04	80443.69	74751.12	30127.15	75.03	21.68	50.8
001170	1650	004312	002041	73269.87	19639.16	29489.21	81262.57	75744.44	29904.00	74.97	21.27	51.1
001170	1700	004312	002041	74042.37	19930.03	29275.27	82076.00	76677.00	29700.20	74.97	20.90	51.2
001170	1710	004312	002041	74869.94	20224.56	29066.76	82821.31	77553.12	29501.34	74.88	20.55	50.6
001170	1720	004312	002041	75681.65	20522.45	28870.27	83560.31	78414.50	29314.46	74.83	20.21	50.4
001170	1730	004312	002041	76582.75	20778.39	28512.82	84318.31	79351.19	29167.59	74.82	19.76	50.8
001170	1740	004312	002041	77369.87	21036.29	28318.25	85032.25	80178.37	28982.45	74.72	19.45	51.0
001170	1750	004312	002041	78168.81	21279.32	28076.23	85758.44	81032.37	28850.28	74.78	19.11	53.0
001170	1800	004312	002041	79019.94	21519.87	27881.85	86513.50	81897.50	28665.98	74.72	18.80	52.9
001170	1810	004312	002041	79829.12	21652.95	27748.01	87243.50	82713.31	28541.73	74.82	18.55	52.6
001170	1820	004312	002041	80642.81	21884.43	27431.38	87951.25	83564.06	28335.21	74.82	18.17	52.8
001170	1830	004312	002041	81452.25	22046.50	27150.39	88643.12	84362.81	28164.08	74.85	17.84	54.2
001170	1840	004312	002041	82213.19	22302.23	26882.71	89327.44	85184.19	27913.14	74.82	17.52	54.3
001170	1850	004312	002041	82973.75	22630.34	26764.34	89980.31	85907.75	27696.60	74.73	17.30	55.4
001170	1900	004312	002041	83622.37	22823.98	26557.23	90639.44	86661.62	27498.87	74.73	17.04	55.6
001170	1910	004312	002041	84299.06	22942.88	26363.04	91255.94	87365.00	27313.31	74.78	16.79	56.0
001170	1920	004312	002041	85031.31	23219.42	26112.73	91855.50	88045.25	26971.86	74.91	16.52	55.4
001170	1930	004312	002041	85673.50	23503.69	25934.77	92429.31	88716.25	26502.23	74.95	16.30	56.0
001170	1940	004312	002041	86334.31	23801.52	25747.88	93001.25	89466.12	26323.41	75.03	16.07	56.0
001170	1950	004312	002041	86998.69	23925.07	25543.42	93604.50	90052.00	26127.85	75.04	15.84	56.6
001170	2000	004312	002041	87657.87	23925.57	25408.37	94215.81	90725.12	26001.50	75.06	15.65	57.2
001170	2010	004312	002041	88327.50	23605.07	25175.09	94829.56	91426.94	25777.36	75.04	15.40	56.9
001170	2020	004312	002041	88993.37	23822.08	24924.33	95365.49	92031.56	25606.56	75.00	15.20	58.4
001170	2030	004312	002041	89380.56	23990.43	24835.90	95818.37	92543.61	25452.69	74.98	15.02	58.5
001170	2040	004312	002041	89877.62	23948.83	24621.66	96216.94	93013.37	25244.82	75.08	14.83	58.9
001170	2050	004312	002041	90418.62	23925.32	24430.58	96668.00	93530.00	25060.71	75.18	14.64	59.7
001170	2100	004312	002041	90923.75	23875.56	24321.59	97166.56	94073.50	24959.01	75.30	14.50	60.1
001170	2110	004312	002041	91561.31	23864.14	24136.70	97649.62	94619.75	24781.50	75.39	14.31	59.7
001170	2120	004312	002041	92119.37	23964.54	23972.34	98157.25	95185.00	24624.81	75.42	14.14	61.0
001170	2130	004312	002041	92730.69	24016.31	23680.35	98721.44	95789.75	24541.09	75.48	14.00	60.8
001170	2140	004312	002041	93311.87	24166.84	23665.57	99252.75	96390.06	24334.58	75.48	13.79	61.5
001170	2150	004312	002041	93783.00	24386.46	23469.96	99703.00	96901.25	24146.05	75.42	13.62	61.3
001170	2160	004312	002041	94214.62	24557.89	23444.71	100145.10	97362.19	24127.18	75.39	13.54	62.1
001170	2170	004312	002041	94721.06	24748.25	23174.20	100605.70	97900.31	23864.21	75.36	13.32	61.4
001170	2180	004312	002041	95302.00	24947.37	23034.94	101174.80	98517.69	23733.61	75.33	13.16	61.6
001170	2190	004312	002041	95902.00	25171.20	22900.28	101759.90	99149.81	23607.69	75.29	13.01	63.5
001170	2200	004312	002041	96442.25	25505.37	22683.30	102304.00	99762.19	23472.64	75.19	12.10	64.1
001170	2210	004312	002041	96931.62	25827.79	22571.31	102621.10	100313.10	23295.54	75.08	12.68	64.6
001170	2220	004312	002041	97446.12	26090.40	22487.05	103353.70	100877.80	23219.40	75.01	12.57	64.9
001170	2230	004312	002041	97927.25	26497.05	22308.38	103872.00	101448.00	23049.20	74.86	12.40	66.1
001170	2240	004312	002041	98301.62	26845.48	22133.00	104276.80	101900.80	22880.21	74.73	12.25	66.0
001170	2250	004312	002041	98603.75	27036.27	22091.44	104602.00	102242.60	22843.64	74.67	12.19	65.8

MISS DATA FORM

SUPPWR TIME STATUS	HANDWR STATUS	X	Y	Z	SLANT RANGE	GROUND RANGE	ALTITUDE	AZ	EL	TEMP1	KH	TEMP2
001120 3000	004312 002041	96453.94	27144.20	21921.21	104429.90	102512.40	22677.38	74.65	12.07	-65.9	-66.7	-66.6
001120 3030	004312 002041	97116.94	27112.63	21824.25	105075.60	102784.20	22584.42	74.65	11.99	-66.4	-66.3	-66.9
001120 3060	004312 002041	99386.25	27524.47	21652.63	105315.30	103126.70	22417.85	74.52	11.86	-67.3	-67.0	-67.0
001120 3090	004312 002041	97728.75	27776.04	21435.94	105720.00	103524.00	22307.06	74.44	11.70	-68.1	-68.0	-68.1
001120 3120	004312 002041	100109.20	28002.98	21323.98	106116.10	103551.40	22101.44	74.37	11.59	-67.7	-68.7	-68.9
001120 3150	004312 002041	100566.90	28187.42	21209.29	106517.00	104384.20	21993.20	74.33	11.49	-70.3	-70.2	-70.4
001120 3180	004312 002041	100827.10	28594.59	20965.52	106879.20	104802.80	21755.72	74.12	11.31	-70.1	-70.4	-71.3
001120 3210	004312 002041	101026.90	29042.70	20802.20	107156.60	105118.10	21597.15	73.96	11.19	-70.6	-70.5	-71.5
001120 3240	004312 002041	101193.40	29129.42	20766.68	107330.10	105302.00	21564.40	73.94	11.16	-71.6	-72.6	-73.0
001120 3270	004312 002041	101421.00	29133.98	20708.75	107334.80	105522.00	21509.79	73.97	11.10	-75.4	-75.2	-75.8
001120 3300	004312 002041	101777.20	29025.59	20574.95	107816.10	105834.70	21380.73	74.08	11.00	-76.4	-75.8	-75.7
001120 3330	004312 002041	102185.00	29127.48	20371.09	108189.80	106234.70	21183.23	74.09	10.85	-75.3	-75.2	-75.7
001120 3360	004312 002041	102681.10	29242.02	20200.22	108657.40	106763.20	21020.19	74.10	10.71	-75.5	-75.5	-75.4
001120 3390	004312 002041	103238.90	29438.89	20165.25	109231.10	107353.60	20994.21	74.08	10.64	-76.5	-76.0	-77.9
001120 3420	004312 002041	103776.10	29704.03	20154.59	109808.40	107942.90	20893.03	74.03	10.58	-76.1	-75.6	-75.6
001120 3450	004312 002041	104190.70	30127.21	20036.02	110293.60	108458.40	20882.04	73.87	10.47	-75.9	-75.9	-76.4
001120 3480	004312 002041	104513.90	30506.52	19860.76	110671.20	108874.70	20713.27	73.73	10.34	-76.2	-76.0	-76.3
001120 3510	004312 002041	104805.40	30897.95	19639.32	111015.40	109264.40	20497.92	73.57	10.19	-76.5	-76.3	-76.2
001120 3540	004312 002041	105162.20	31110.75	19421.92	111402.10	109667.40	20486.82	73.52	10.14	-76.6	-76.4	-76.3
001120 3570	004312 002041	105600.90	31307.21	19588.93	111871.70	110143.40	20461.34	73.49	10.08	-76.8	-76.7	-76.4

ROCS 3

B-65

DATE	TIME	DATA FILE	BINARY	PUMP	PAGE
10-15-58	27	NOV	1954		1

B-66

02:35:38 29 MAR, 1984 DATA FILE BINARY DUMP

ROCS 3

1-69

[illegible]

B-7d

PAGE 9

ROCS 3

ATTACHMENT 2

INPUT CO-RAWINSONDE FILE (CONTROL AND TAB)

PASS 1

B-73

UNITS SWITCH = 1
 WINDS SWITCH = 0
 TEMPERATURE SWITCH = 0
 JUDICIAL SWITCH = 1
 LOG SWITCH = 0
 SURGE SWITCH = 0
 SURFACE Vx = .00000 F/SEC
 SURFACE Vy = .00000 F/SEC
 SURFACE WIND DIRECTION = .00000 DEGREES
 SURFACE WIND SPEED = .00000 F/SEC
 STATION NUMBER = 1
 DAY = 18
 MONTH = 1
 YEAR = 1984
 ALTITUDE (INCREMENT) = 420.21
 RELEASE (INCH) = 1015.2011
 PROPOUSE WIND DIRECTION = 250.00 DEGREES
 PROPOUSE TIME = 3660.0 SECONDS
 PROPOUSE GEOPOTENTIAL HEIGHT = 56307.22 FEET
 PROPOUSE DEW POINT = 99.90 DEG. C
 PROPOUSE GEOMETRIC HEIGHT = 56340.71 FEET
 PROPOUSE L.A. = 33.23
 PROPOUSE PRESSURE = 69.91 MBs
 PROPOUSE TEMPERATURE = -27.50 DEG. C
 PROPOUSE RELATIVE HUMIDITY = 999.00 %
 PROPOUSE WIND SPEED = 51.87 KNOTS
 STATION LATITUDE = 29.4833
 TERMINATION GEOPOTENTIAL HEIGHT = 113912.50 FEET
 TERMINATION PRESSURE = 5.46 MBs
 FLIGHT IDENTIFICATION = 0074120018
 SOUND TYPE = 101

ROCS 3

ALTITUDE FEET	DIN Deg	SFO NTS	TEMP Deg C	DEW PT Deg C	PRESSURE HRS	RH PCT	AB HUM G/H3	DENSITY G/H3	IN N	VS NTS	SKN /SEC	VPR MBS	FW MM
5.00	211.9	8.1	16.50	16.60	1018.30	100.0	14.13	1215.76	356.7	342.8	.000	18.90	.0
250.00	210.4	10.3	20.32	20.32	987.81	100.0	17.70	1164.24	365.6	345.3	.032	23.98	4.0
500.00	210.4	10.3	20.09	20.03	961.71	99.6	17.33	1132.00	356.2	345.2	.009	23.45	8.4
750.00	212.7	10.4	18.47	18.32	934.32	99.0	15.66	1106.67	341.1	344.1	.002	21.08	12.6
1000.00	219.7	10.5	16.94	16.89	907.56	99.7	14.39	1081.18	328.2	343.2	.005	19.27	16.4
1250.00	224.9	10.2	15.47	15.47	881.41	100.0	13.23	1055.86	315.9	342.2	.002	17.62	19.9
1500.00	224.9	9.7	14.21	13.73	855.91	97.1	11.89	1030.45	302.4	341.3	.003	15.76	23.0
1750.00	220.4	9.6	13.48	13.25	831.05	86.4	10.10	1003.95	285.7	340.8	.003	13.35	25.8
2000.00	229.4	10.7	12.50	10.62	806.80	88.3	9.72	978.08	277.8	340.2	.008	12.81	28.3
2250.00	232.7	11.8	11.66	7.19	783.19	74.8	7.84	953.26	260.8	339.5	.005	10.30	30.5
2500.00	232.6	12.1	10.87	4.98	760.19	67.0	6.65	928.40	248.1	338.9	.001	8.72	32.3
2750.00	222.1	11.9	10.08	3.50	732.72	63.9	6.06	903.81	237.4	338.4	.003	7.92	33.9
3000.00	220.9	12.3	9.09	.78	715.99	56.3	4.97	880.76	227.2	337.7	.007	6.47	35.3
3250.00	208.8	14.1	6.93	.46	694.69	64.0	4.98	861.06	223.1	336.4	.013	6.44	36.5
3500.00	206.6	14.8	4.95	-4.15	673.88	52.0	3.50	842.04	209.7	335.1	.004	4.49	37.6
3750.00	202.6	13.8	3.51	-10.39	653.55	43.7	2.66	821.37	192.9	334.1	.006	3.40	38.4
4000.00	198.5	13.2	3.45	-23.29	633.76	11.9	.73	797.79	182.4	333.8	.005	.93	38.8
4250.00	196.3	13.8	2.27	-23.44	614.52	12.8	.72	774.87	172.7	333.1	.003	.92	39.0
4500.00	206.1	14.2	.46	-24.18	595.77	13.6	.68	758.16	173.3	332.0	.010	.86	39.1
4750.00	226.1	16.3	-1.74	-23.82	572.45	16.8	.71	740.78	169.6	330.7	.023	.87	39.3
5000.00	235.9	18.8	-3.69	-22.09	559.57	22.7	.84	722.96	166.5	329.5	.016	1.04	39.5
5250.00	236.7	19.5	-5.65	-21.19	542.13	28.0	.91	705.48	163.2	328.3	.003	1.13	39.7
5500.00	236.0	19.8	-7.64	-23.99	525.10	25.7	.73	688.56	158.2	327.1	.001	.89	39.9
5750.00	236.6	19.7	-9.30	-22.21	508.50	17.9	.45	671.15	152.5	326.0	.001	.54	40.1
6000.00	238.6	19.1	-10.88	-32.77	492.32	14.5	.32	653.77	147.8	325.0	.004	.39	40.2
6250.00	243.0	18.9	-12.90	-34.55	476.54	14.2	.27	637.75	143.9	323.8	.006	.32	40.2
6500.00	247.9	19.8	-15.06	-26.32	461.16	45.7	.69	622.06	143.3	322.5	.008	.82	40.4
6750.00	250.0	21.4	-16.82	-24.45	446.17	32.7	.74	605.93	140.1	321.4	.002	.88	40.5
7000.00	248.1	23.5	-18.41	-30.48	431.57	34.3	.43	589.94	134.4	320.3	.009	.50	40.7
7250.00	244.0	23.2	-20.24	-36.41	417.36	22.1	.23	574.75	129.7	319.2	.011	.27	40.8
7500.00	241.7	27.5	-22.02	-40.21	403.51	18.0	.16	559.67	125.8	318.0	.008	.18	40.8
7750.00	241.8	28.2	-23.81	-34.92	390.03	35.8	.27	544.79	123.3	316.9	.003	.31	40.9
8000.00	242.0	29.1	-25.45	-41.65	376.91	22.3	.16	530.02	119.2	315.8	.003	.18	40.9
8250.00	242.5	30.1	-27.11	-40.36	364.15	33.4	.18	515.50	116.2	314.8	.004	.21	41.0
8500.00	243.2	31.2	-28.85	-35.02	351.75	55.1	.28	501.45	113.7	313.7	.005	.31	41.0
8750.00	243.1	32.2	-30.62	-39.50	339.67	42.1	.18	487.95	110.0	312.5	.004	.20	41.1
9000.00	245.3	32.2	-32.30	-44.54	327.94	28.1	.10	474.29	106.4	311.4	.003	.11	41.1
9250.00	246.3	30.4	-34.52	-45.82	316.52	30.3	.09	462.03	103.6	310.0	.007	.10	41.1
9500.00	248.0	29.1	-36.57	-48.08	305.40	29.0	.07	449.68	100.7	308.7	.006	.08	41.2
9750.00	249.0	28.7	-38.22	-52.40	294.59	20.8	.04	436.82	97.6	307.6	.003	.05	41.2
10000.00	247.9	28.2	-40.25	-52.65	284.07	24.3	.04	424.90	95.0	306.2	.003	.04	41.2
10250.00	247.4	28.0	-42.00	-54.72	273.85	23.2	.03	412.73	92.2	305.1	.001	.04	41.2
10500.00	247.0	28.3	-44.09	-56.36	263.93	23.8	.03	401.40	89.6	303.7	.002	.03	41.2
10750.00	247.1	29.6	-46.14	-57.36	254.27	26.3	.02	390.21	87.1	302.3	.005	.02	41.2
11000.00	248.9	31.3	-47.95	-58.38	244.90	28.4	.02	378.65	84.6	301.1	.008	.02	41.2
11250.00	252.0	32.4	-50.14	-58.49	235.79	31.6	.02	368.34	82.2	299.7	.008	.02	41.2
11500.00	254.7	31.7	-52.58	-61.43	226.94	32.7	.01	358.42	80.0	298.0	.007	.01	41.2
11750.00	258.0	29.9	-54.64	-63.41	218.33	32.3	.01	348.08	77.6	296.6	.010	.01	41.2
12000.00	262.8	28.9	-56.91	-65.03	209.96	34.3	.01	338.25	75.4	295.1	.011	.01	41.2
12250.00	266.4	29.2	-58.88	-66.70	201.83	34.9	.01	328.15	73.2	293.7	.008	.01	41.2
12500.00	268.1	30.6	-60.17	-68.90	193.97	99.0	.99	317.27	70.7	292.9	.006	.99	99.0
12750.00	266.4	33.0	-60.77	-72.90	186.38	99.0	.99	305.75	68.1	292.4	.010	.99	99.0

ROCS 3

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14000.00	55.0	61.58	99.90	1.9,05	999.0	99.99	394.85	65.7	291.9	.014	99.99	999.0
14500.00	54.4	-62.23	99.90	1.72.01	999.0	99.99	384.11	65.3	291.4	.006	99.99	999.0
15000.00	53.9	-62.87	99.90	1.63.23	999.0	99.99	273.49	60.9	291.1	.005	99.99	999.0
15500.00	53.2	-63.27	99.90	1.58.68	999.0	99.99	263.42	58.7	290.7	.005	99.99	999.0
16000.00	52.9	-63.13	99.90	1.52.38	999.0	99.99	153.97	56.5	290.1	.013	99.99	999.0
16500.00	52.7	-63.17	99.90	1.46.59	999.0	99.99	143.00	54.6	289.4	.008	99.99	999.0
17000.00	52.6	-63.20	99.90	1.40.45	999.0	99.99	235.19	52.4	289.4	.004	99.99	999.0
17500.00	52.6	-63.94	99.90	1.34.81	999.0	99.99	214.35	50.6	290.2	.012	99.99	999.0
18000.00	52.7	-64.77	99.90	1.29.49	999.0	99.99	214.35	48.1	290.0	.011	99.99	999.0
18500.00	52.9	-65.22	99.90	1.24.51	999.0	99.99	209.28	46.6	288.7	.004	99.99	999.0
19000.00	53.0	-65.68	99.90	1.19.29	999.0	99.99	202.54	45.1	287.4	.005	99.99	999.0
19500.00	53.1	-66.11	99.90	1.14.45	999.0	99.99	195.95	43.6	286.2	.007	99.99	999.0
20000.00	53.1	-66.55	99.90	1.09.75	999.0	99.99	189.47	42.2	285.1	.009	99.99	999.0
20500.00	53.2	-67.02	99.90	1.05.27	999.0	99.99	182.80	40.7	284.2	.007	99.99	999.0
21000.00	53.3	-67.43	99.90	1.00.84	999.0	99.99	176.52	39.3	283.1	.003	99.99	999.0
21500.00	53.3	-67.88	99.90	96.63	999.0	99.99	170.21	37.9	282.2	.007	99.99	999.0
22000.00	53.4	-68.27	99.90	92.66	999.0	99.99	163.74	36.5	281.6	.015	99.99	999.0
22500.00	53.5	-68.68	99.90	88.66	999.0	99.99	157.84	35.0	280.9	.013	99.99	999.0
23000.00	53.7	-69.11	99.90	84.61	999.0	99.99	150.17	33.5	281.6	.010	99.99	999.0
23500.00	53.9	-69.54	99.90	80.54	999.0	99.99	143.68	32.0	281.8	.014	99.99	999.0
24000.00	54.1	-69.95	99.90	76.43	999.0	99.99	137.65	30.7	281.8	.007	99.99	999.0
24500.00	54.3	-70.33	99.90	72.26	999.0	99.99	131.89	29.4	281.4	.005	99.99	999.0
25000.00	54.5	-70.68	99.90	68.04	999.0	99.99	126.67	28.2	281.4	.007	99.99	999.0
25500.00	54.7	-71.01	99.90	63.77	999.0	99.99	121.76	27.1	280.9	.009	99.99	999.0
26000.00	54.9	-71.31	99.90	59.45	999.0	99.99	116.78	26.0	280.6	.003	99.99	999.0
26500.00	55.1	-71.58	99.90	55.07	999.0	99.99	111.57	24.8	281.0	.008	99.99	999.0
27000.00	55.3	-71.83	99.90	50.66	999.0	99.99	106.57	23.5	282.9	.011	99.99	999.0
27500.00	55.5	-72.05	99.90	46.21	999.0	99.99	101.44	22.4	283.6	.015	99.99	999.0
28000.00	55.7	-72.24	99.90	41.73	999.0	99.99	96.52	21.4	284.3	.008	99.99	999.0
28500.00	55.9	-72.43	99.90	37.22	999.0	99.99	91.62	20.4	284.8	.005	99.99	999.0
29000.00	56.1	-72.61	99.90	32.68	999.0	99.99	87.62	19.6	284.9	.005	99.99	999.0
29500.00	56.3	-72.78	99.90	28.11	999.0	99.99	83.34	18.6	286.4	.009	99.99	999.0
30000.00	56.5	-72.94	99.90	23.51	999.0	99.99	79.39	17.7	287.7	.007	99.99	999.0
30500.00	56.7	-73.09	99.90	18.86	999.0	99.99	75.96	16.9	287.8	.006	99.99	999.0
31000.00	56.9	-73.23	99.90	14.16	999.0	99.99	72.27	16.1	289.1	.003	99.99	999.0
31500.00	57.1	-73.35	99.90	9.41	999.0	99.99	68.54	15.3	290.9	.003	99.99	999.0
32000.00	57.3	-73.45	99.90	4.65	999.0	99.99	65.39	14.6	291.9	.005	99.99	999.0
32500.00	57.5	-73.53	99.90	38.16	999.0	99.99	62.88	14.0	291.8	.002	99.99	999.0
33000.00	57.7	-73.59	99.90	33.66	999.0	99.99	60.53	13.5	291.5	.005	99.99	999.0
33500.00	57.9	-73.62	99.90	29.12	999.0	99.99	58.15	13.0	291.5	.002	99.99	999.0
34000.00	58.1	-73.64	99.90	24.54	999.0	99.99	55.69	12.4	292.0	.007	99.99	999.0
34500.00	58.3	-73.65	99.90	20.00	999.0	99.99	53.09	11.8	293.1	.008	99.99	999.0
35000.00	58.5	-73.66	99.90	15.41	999.0	99.99	50.94	11.3	293.4	.012	99.99	999.0
35500.00	58.7	-73.67	99.90	10.77	999.0	99.99	49.11	10.9	292.9	.006	99.99	999.0
36000.00	58.9	-73.68	99.90	6.10	999.0	99.99	47.32	10.5	292.6	.004	99.99	999.0
36500.00	59.1	-73.69	99.90	1.43	999.0	99.99	45.40	10.1	292.8	.013	99.99	999.0
37000.00	59.3	-73.70	99.90	26.67	999.0	99.99	43.41	9.7	293.6	.005	99.99	999.0
37500.00	59.5	-73.71	99.90	22.14	999.0	99.99	41.55	9.3	294.2	.003	99.99	999.0
38000.00	59.7	-73.72	99.90	17.57	999.0	99.99	39.87	8.9	294.5	.008	99.99	999.0
38500.00	59.9	-73.73	99.90	12.94	999.0	99.99	38.08	8.5	295.5	.008	99.99	999.0
39000.00	60.1	-73.74	99.90	8.26	999.0	99.99	36.27	8.1	297.0	.007	99.99	999.0
39500.00	60.3	-73.75	99.90	3.54	999.0	99.99	34.49	7.7	298.7	.007	99.99	999.0
40000.00	60.5	-73.76	99.90	21.94	999.0	99.99	33.24	7.4	298.5	.002	99.99	999.0
40500.00	60.7	-73.77	99.90	17.23	999.0	99.99	32.01	7.1	298.5	.001	99.99	999.0
41000.00	60.9	-73.78	99.90	12.51	999.0	99.99	30.78	6.9	298.6	.001	99.99	999.0
41500.00	61.1	-73.79	99.90	7.78	999.0	99.99	29.67	6.6	298.4	.002	99.99	999.0

27000.00	255.7	27.0	-52.65	99.90	18.13	999.0	99.99	28.64	6.4	298.0	.003	99.99	999.0
27250.00	257.9	27.7	-52.74	99.90	17.44	999.0	99.99	27.57	6.1	297.9	.005	99.99	999.0
27500.00	259.4	28.8	-52.54	99.90	16.79	999.0	99.99	26.51	5.9	298.0	.005	99.99	999.0
27750.00	258.8	30.5	-51.75	99.90	16.16	999.0	99.99	25.43	5.7	298.6	.007	99.99	999.0
28000.00	255.9	32.0	-51.47	99.90	15.55	999.0	99.99	24.44	5.4	298.8	.009	99.99	999.0
28250.00	253.5	33.6	-51.59	99.90	14.97	999.0	99.99	23.54	5.2	298.7	.012	99.99	999.0
28500.00	249.2	34.9	-50.86	99.90	14.41	999.0	99.99	22.59	5.0	299.2	.008	99.99	999.0
28750.00	246.5	36.4	-50.11	99.90	13.88	999.0	99.99	21.67	4.8	299.7	.005	99.99	999.0
29000.00	247.6	35.8	-49.55	99.90	13.36	999.0	99.99	20.82	4.6	300.1	.004	99.99	999.0
29250.00	249.6	35.9	-49.32	99.90	12.87	999.0	99.99	20.04	4.5	300.1	.005	99.99	999.0
29500.00	252.4	35.2	-49.90	99.90	12.39	999.0	99.99	19.33	4.3	299.8	.008	99.99	999.0
29750.00	253.8	33.9	-49.35	99.90	11.93	999.0	99.99	18.57	4.1	300.2	.010	99.99	999.0
30000.00	259.0	33.4	-48.40	99.90	11.49	999.0	99.99	17.81	4.0	300.8	.008	99.99	999.0
30250.00	260.4	35.1	-47.19	99.90	11.07	999.0	99.99	17.06	3.8	301.6	.008	99.99	999.0
30500.00	260.1	36.7	-46.47	99.90	10.66	999.0	99.99	16.38	3.7	302.1	.006	99.99	999.0
30750.00	252.8	38.1	-46.41	99.90	10.27	999.0	99.99	15.78	3.5	302.2	.008	99.99	999.0
31000.00	254.1	37.2	-46.58	99.90	9.90	999.0	99.99	15.22	3.4	302.0	.010	99.99	999.0
31250.00	250.1	36.3	-46.72	99.90	9.53	999.0	99.99	14.67	3.3	301.9	.011	99.99	999.0
31500.00	247.7	35.2	-48.25	99.90	9.18	999.0	99.99	14.22	3.2	300.9	.008	99.99	999.0
31750.00	245.2	34.1	-49.81	99.90	8.84	999.0	99.99	13.80	3.1	299.9	.007	99.99	999.0
32000.00	244.8	34.7	-50.99	99.90	8.51	999.0	99.99	13.35	3.0	299.1	.002	99.99	999.0
32250.00	244.7	35.5	-52.12	99.90	8.20	999.0	99.99	12.92	2.9	298.3	.003	99.99	999.0
32500.00	241.2	35.9	-52.74	99.90	7.89	999.0	99.99	12.47	2.8	297.9	.002	99.99	999.0
32750.00	243.4	36.1	-53.10	99.90	7.59	999.0	99.99	12.02	2.7	297.7	.002	99.99	999.0
33000.00	242.0	37.3	-52.10	99.90	7.31	999.0	99.99	11.52	2.6	298.3	.006	99.99	999.0
33250.00	240.8	38.9	-50.55	99.90	7.04	999.0	99.99	11.01	2.5	299.4	.007	99.99	999.0
33500.00	243.1	40.2	-48.87	99.90	6.78	999.0	99.99	10.52	2.3	300.5	.008	99.99	999.0
33750.00	245.4	40.6	-47.23	99.90	6.53	999.0	99.99	10.06	2.2	301.4	.007	99.99	999.0
34000.00	247.7	40.5	-45.60	99.90	6.29	999.0	99.99	9.63	2.1	302.7	.006	99.99	999.0
34250.00	242.1	40.9	-43.61	99.90	6.06	999.0	99.99	9.20	2.1	304.0	.002	99.99	999.0
34500.00	999.0	999.0	-41.48	99.90	5.84	999.0	99.99	8.79	2.0	305.4	.999	99.99	999.0
34750.00	999.0	999.0	-39.71	99.90	5.63	999.0	99.99	8.41	1.9	306.6	.999	99.99	999.0

ROCS 3

ROCS 3

ATTACHMENT 3
OUTPUT TABULAR FILE

PASS 1

B-79

MAG 1984 RUN TIME 14:44:54
 SUPER LUKI UNALASNOLE FUN 100

ATTACHED TO 65-17713-2094-1 (144)

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 05-10-2000 BY 60322

LINE	SEC	AZIMUTH	ELEVATION	MSD	TRAINING DATA	ROT	HR	MIN	SEC	TIME	AZIMUTH	ELEVATION	DIFFERENCE/MINUTE	RANGE	ALTITUDE
54924.00	97.720	63.822	68727.75	61559.18	15	16	4			.00		.00	.00		.00
54924.00	96.848	62.243	66771.56	59168.38	15	16	34			30.00	-2.14	-2.42	3912.38	-4781.59	
54924.00	96.271	61.079	65131.97	57091.23	15	17	4			30.00	-2.75	-2.33	3279.19	-4154.61	
54924.00	95.591	60.175	63506.01	55263.92	15	17	34			30.00	-1.76	-1.81	3051.92	-3654.63	
54924.00	94.608	59.529	62061.53	53524.64	15	18	4			30.00	-2.26	-1.24	3088.96	-3384.56	
54924.00	93.669	60.887.93	60887.93	52105.62	15	18	34			30.00	-2.68	-1.04	2747.20	-2932.02	
54924.00	92.139	58.485	59399.99	50718.74	15	19	4			30.00	-2.86	-1.05	2573.88	-2773.77	
54924.00	89.805	58.069	58147.28	49627.45	15	19	34			30.00	-2.71	-1.83	2505.41	-2582.59	
54924.00	87.088	57.598	57064.67	48310.71	15	20	4			30.00	-1.52	-1.74	2165.23	-2233.48	
54924.00	84.778	56.108	56141.60	47219.36	15	20	34			30.00	-3.42	-1.18	1846.14	-2182.70	
54924.00	83.425	56.206	55522.14	46224.23	15	21	4			30.00	-3.51	-1.82	1228.91	-1996.24	
54924.00	81.975	56.999.21	54999.21	45278.80	15	21	34			30.00	-3.26	-1.46	1063.86	-1804.86	
54924.00	80.331	56.135	54135.42	44135.42	15	22	4			30.00	-3.69	-1.81	1528.68	-1696.86	
54924.00	81.111	56.135	54135.42	44135.42	15	22	34			30.00	-2.89	-1.86	1414.31	-1624.67	
54924.00	82.076	56.135	54135.42	44135.42	15	23	4			30.00	-2.02	-1.36	1042.05	-1584.73	
54924.00	83.425	56.206	55522.14	46224.23	15	21	34			30.00	1.03	-1.50	-673.01	-130.77	
54924.00	84.778	56.108	56141.60	47219.36	15	20	34			30.00	-4.65	-1.23	-337.43	-1369.10	
54924.00	86.131	56.135	54135.42	44135.42	15	23	4			30.00	.47	-2.26	-151.54	-1399.48	
54924.00	87.088	56.108	56141.60	47219.36	15	20	34			30.00	-2.75	-2.16	-1509.14	-1309.14	
54924.00	88.441	56.135	54135.42	44135.42	15	23	4			30.00	.89	-2.16	91.49	-1212.23	
54924.00	89.805	56.108	56141.60	47219.36	15	20	34			30.00	-2.13	-2.23	201.16	-1200.92	
54924.00	91.168	56.135	54135.42	44135.42	15	23	4			30.00	-2.79	-1.39	327.91	-1115.39	
54924.00	92.521	56.135	54135.42	44135.42	15	23	4			30.00	-1.01	-2.05	628.15	-1248.92	
54924.00	93.874	56.135	54135.42	44135.42	15	23	4			30.00	-2.20	-2.54	993.31	-970.84	
54924.00	95.227	56.135	54135.42	44135.42	15	23	4			30.00	.15	-2.49	1150.22	-935.04	
54924.00	96.580	56.135	54135.42	44135.42	15	23	4			30.00	-4.48	-2.83	1313.45	-1103.45	
54924.00	97.933	56.135	54135.42	44135.42	15	23	4			30.00	-2.90	-1.59	1052.79	-882.81	
54924.00	99.286	56.135	54135.42	44135.42	15	24	4			30.00	-1.04	-1.77	1268.42	-749.69	
54924.00	98.54	56.135	54135.42	44135.42	15	23	4			30.00	-3.39	1.55	1347.23	-566.13	
54924.00	97.244	56.135	54135.42	44135.42	15	23	4			30.00	-1.10	-1.82	1188.98	-930.96	
54924.00	95.860	56.135	54135.42	44135.42	15	23	4			30.00	-5.59	1.83	1578.71	-778.98	
54924.00	94.561	56.135	54135.42	44135.42	15	23	4			30.00	-2.14	-1.08	1088.94	-402.93	
54924.00	93.471	56.135	54135.42	44135.42	15	23	4			30.00	-1.18	-1.46	1505.91	-53.02	
54924.00	92.387	56.135	54135.42	44135.42	15	23	4			30.00	-1.17	-1.11	1527.84	-566.34	
54924.00	91.159	56.135	54135.42	44135.42	15	23	4			30.00	-1.70	-1.70	1490.93	-887.61	
54924.00	89.784	56.135	54135.42	44135.42	15	23	4			30.00	-3.36	-1.16	1457.90	-423.45	
54924.00	88.441	56.135	54135.42	44135.42	15	23	4			30.00	-4.41	1.16	1447.15	-663.43	
54924.00	87.088	56.135	54135.42	44135.42	15	23	4			30.00	-3.32	-1.13	1454.12	-467.74	
54924.00	85.740	56.135	54135.42	44135.42	15	23	4			30.00	-1.14	-1.19	1451.68	-553.30	
54924.00	84.387	56.135	54135.42	44135.42	15	23	4			30.00	.34	-1.32	1515.38	-698.01	
54924.00	83.033	56.135	54135.42	44135.42	15	23	4			30.00	-1.13	-1.13	1519.13	-548.65	
54924.00	81.680	56.135	54135.42	44135.42	15	23	4			30.00	.25	-1.13	1614.63	-524.96	
54924.00	80.327	56.135	54135.42	44135.42	15	23	4			30.00	.25	-1.87	1514.25	-309.22	
54924.00	78.974	56.135	54135.42	44135.42	15	23	4			30.00	-1.13	-1.29	1477.88	-826.75	
54924.00	77.621	56.135	54135.42	44135.42	15	23	4			30.00	-1.01	-1.88	1507.63	-381.82	
54924.00	76.268	56.135	54135.42	44135.42	15	23	4			30.00	-1.05	-1.05	1606.50	-566.36	
54924.00	74.915	56.135	54135.42	44135.42	15	23	4			30.00	-1.10	-1.93	1602.25	-457.37	
54924.00	73.562	56.135	54135.42	44135.42	15	23	4			30.00	.02	-1.90	1540.50	-476.13	
54924.00	72.209	56.135	54135.42	44135.42	15	23	4			30.00	-1.12	-1.82	1533.75	-408.07	
54924.00	70.856	56.135	54135.42	44135.42	15	23	4			30.00	-1.08	-1.75	1451.38	-372.62	
54924.00	69.503	56.135	54135.42	44135.42	15	23	4			30.00	-1.10	-1.70	1363.00	-363.63	
54924.00	68.150	56.135	54135.42	44135.42	15	23	4			30.00	-1.11	-1.67	1351.50	-341.80	

56674.00	74.420	19.765	77100.62	26408.43	15	44	34	30.00	-.02	1386.25	-634.39
56704.00	74.789	19.453	77753.44	26319.16	15	45	4	30.00	-.06	1305.63	-538.55
56734.00	74.775	19.110	78417.50	26106.87	15	45	34	30.00	-.03	1328.13	-424.59
56764.00	74.766	18.801	79107.94	25938.34	15	46	4	30.00	-.02	1380.88	-337.05
56794.00	74.824	18.545	79775.44	25824.74	15	46	34	30.00	-.12	1335.00	-227.50
56824.00	74.818	18.173	80421.62	25544.50	15	47	4	30.00	-.01	1294.38	-560.48
56854.00	74.855	17.836	81055.25	25296.59	15	47	34	30.00	-.07	1265.25	-495.81
56884.00	74.827	17.519	81681.00	25067.11	15	48	4	30.00	-.06	1251.50	-458.97
56914.00	74.724	17.304	82278.00	24960.55	15	48	34	30.00	-.19	1194.00	-213.12
56944.00	74.730	17.038	82880.69	24779.73	15	49	4	30.00	-.01	1205.38	-361.63
56974.00	74.775	16.792	83444.32	24610.15	15	49	34	30.00	-.09	1127.38	-439.16
57004.00	74.915	16.516	83972.62	24389.52	15	50	4	30.00	-.28	1098.50	-441.67
57034.00	74.950	16.296	84517.31	24234.22	15	50	34	30.00	-.07	1049.38	-310.20
57064.00	75.032	16.073	85040.31	24070.71	15	51	4	30.00	-.16	1046.00	-327.02
57094.00	75.036	15.836	85591.94	23891.90	15	51	34	30.00	-.01	1103.25	-357.83
57124.00	75.058	15.645	86150.94	23776.39	15	52	4	30.00	-.04	1118.00	-231.02
57154.00	75.048	15.395	86712.12	23521.44	15	52	34	30.00	-.04	1122.38	-408.91
57184.00	74.998	15.195	87202.37	23415.27	15	53	4	30.00	-.08	980.50	-312.34
57214.00	74.975	15.022	87616.31	23274.75	15	53	34	30.00	-.03	827.88	-281.03
57244.00	75.077	14.827	87980.75	23084.55	15	54	4	30.00	-.21	728.88	-380.41
57274.00	75.179	14.639	88393.19	22916.14	15	54	34	30.00	-.20	624.88	-336.90
57304.00	75.298	14.496	88849.06	22823.15	15	55	4	30.00	-.24	911.75	-185.99
57334.00	75.392	14.310	89290.81	22660.83	15	55	34	30.00	-.19	883.50	-324.63
57364.00	75.418	14.136	89754.94	22517.58	15	56	4	30.00	-.05	928.25	-286.50
57394.00	75.480	13.998	90270.82	22441.02	15	56	34	30.00	-.12	1031.68	-153.13
57424.00	75.480	13.794	90756.69	22252.21	15	57	4	30.00	-.00	971.63	-377.60
57454.00	75.424	13.615	91168.32	22079.83	15	57	34	30.00	-.11	823.38	-344.27
57484.00	75.390	13.539	91572.62	22062.58	15	58	4	30.00	-.07	808.50	-34.50
57514.00	75.357	13.317	91993.81	21822.12	15	58	34	30.00	-.07	862.38	-480.92
57544.00	75.331	13.160	92514.25	21702.73	15	59	4	30.00	-.05	1040.88	-238.78
57574.00	75.293	13.005	93049.25	21582.76	15	59	34	30.00	-.08	1070.00	-229.93
57604.00	75.187	12.799	93546.75	21379.07	16	0	4	30.00	-.21	995.00	-417.38
57634.00	75.080	12.681	94019.56	21302.16	16	0	34	30.00	-.21	945.63	-153.82
57664.00	75.011	12.567	94506.62	21232.57	16	1	4	30.00	-.14	974.13	-139.18
57694.00	74.859	12.402	94980.50	21076.77	16	1	34	30.00	-.30	927.25	-311.41
57724.00	74.725	12.254	95350.69	20922.43	16	2	4	30.00	-.27	740.38	-308.67
57754.00	74.667	12.192	95648.06	20889.00	16	2	34	30.00	-.12	594.75	-66.88
57784.00	74.646	12.070	95856.44	20736.96	16	3	4	30.00	-.04	416.75	-304.08
57814.00	74.648	11.988	96081.06	20651.95	16	3	34	30.00	-.00	449.25	-170.01
57844.00	74.520	11.858	96355.19	20499.68	16	4	4	30.00	-.25	548.25	-304.55
57874.00	74.437	11.698	96670.31	20306.92	16	4	34	30.00	-.17	630.25	-385.52
57904.00	74.372	11.592	97032.50	20210.36	16	5	4	30.00	-.13	724.38	-193.12
57934.00	74.334	11.485	97359.12	20111.37	16	5	34	30.00	-.08	733.25	-197.97
57964.00	74.167	11.313	97730.31	19894.22	16	6	4	30.00	-.33	662.38	-434.31
57994.00	73.961	11.194	97983.94	19749.24	16	6	34	30.00	-.41	507.25	-289.25
58024.00	73.941	11.156	98142.56	19719.29	16	7	4	30.00	-.04	317.25	-59.91
58054.00	73.923	11.103	98329.81	19649.36	16	7	34	30.00	-.11	374.50	-99.84
58084.00	74.082	11.001	98587.00	19551.35	16	8	4	30.00	-.22	514.38	-236.02
58114.00	74.090	10.853	98928.75	19320.79	16	8	34	30.00	-.01	683.50	-361.12
58144.00	74.104	10.714	99356.31	19221.70	16	9	4	30.00	-.03	855.13	-298.18
58174.00	74.084	10.638	99680.82	19192.95	16	9	34	30.00	-.04	1049.13	-47.51
58204.00	74.027	10.576	100408.80	19196.89	16	10	4	30.00	-.11	1055.88	-2.12
58234.00	73.872	10.462	100852.40	19095.40	16	10	34	30.00	-.31	887.25	-202.98

ROCS 3

TEST NUMBER 0000
 44th LANAVALAR AFB, FLORIDA
 1515Z 18 JAN 1984

SUNNY TIME	TIME	TEMP	CHP	PRESS	DENSITY	KF	VS	SHR
ALT	DIR	RFD	CORR	HGS	G/M3	HFS	HFS	/SEC
GEOM	DEG	MFS						
20000	274	13	202.24	-.46	999.9999	7.24	285.20	.999
21000	214	14	206.58	-.44	46.8581	5.14	288.25	.003
22000	249	17	211.30	-.45	39.8551	4.69	291.52	.005
23000	271	16	212.92	-.47	33.9738	5.61	292.64	.006
24000	260	21	216.46	-.48	29.0207	5.90	295.06	.006
25000	253	23	217.93	-.50	24.8342	3.79	296.06	.003
26000	256	26	219.90	-.51	21.2844	5.32	297.39	.003
27000	251	22	222.04	-.51	18.2718	5.92	298.84	.003
28000	252	32	224.66	-.57	15.6962	8.32	300.59	.005
29000	259	32	226.17	-.53	13.5159	5.49	301.74	.003
30000	256	32	228.74	-.60	11.6488	9.77	303.31	.001
31000	245	35	224.24	-.59	10.0374	9.86	300.31	.007
32000	247	34	222.31	-.65	8.6278	7.66	292.02	.001
33000	249	35	228.23	-.73	7.4280	12.41	302.97	.005
34000	237	36	231.15	-.75	6.4130	12.42	304.90	.001
35000	243	38	236.51	-.83	5.5516	14.84	308.42	.004
36000	253	41	243.75	-.87	4.8231	14.69	313.11	.008
37000	254	41	247.90	-.79	4.2067	14.10	315.76	.001
38000	251	36	255.67	-.99	3.6791	20.78	320.67	.006
39000	254	30	257.91	-.87	3.2274	19.92	322.07	.006
40000	267	27	258.77	-.95	2.8329	20.68	322.61	.007
41000	272	24	263.45	-.97	2.4900	23.06	325.51	.004
42000	252	17	265.83	-.95	2.1927	22.54	326.98	.010
43000	199	16	264.26	-.98	1.9714	25.29	326.01	.015
44000	183	23	265.60	-.94	1.7010	27.06	326.84	.009
45000	181	29	268.07	-.95	1.4597	28.79	328.36	.006
46000	185	29	268.92	-.94	1.3233	31.89	328.88	.001
47000	185	27	272.06	-.94	1.1687	34.10	330.79	.002
48000	182	25	273.31	-.94	1.0332	36.56	331.55	.002
49000	174	24	269.49	-.94	.9131	37.86	329.35	.003
50000	163	26	268.58	-.99	.8060	42.69	328.66	.005
51000	160	26	270.55	-.95	.7118	45.25	329.87	.001
52000	162	26	271.30	-.94	.6288	47.32	330.33	.001
53000	167	26	270.95	-.93	.5557	49.64	330.11	.002
54000	170	26	270.21	-.93	.4909	54.41	329.66	.002
55000	172	24	268.94	-.94	.4335	57.90	328.89	.004
56000	191	19	267.28	-.97	.3826	60.46	327.87	.007
57000	214	15	263.20	-.94	.3369	64.42	325.34	.008
58000	245	14	258.60	-.91	.2966	68.68	322.50	.008
59129	249	14	258.01	-.97	.2917	69.24	322.13	.008

ROCS 3

MAXIMUM ALTITUDE 61559

TEST NUMBER 0000
LAKE LANGRANAL AFS, FLORIDA
15 57 18 JAN 1984

ALF	DEG	IN	SPD	TEMP	TEMP	PRESS	DENSITY	RF	US	SHR
GEOM	DEG	IN	MPH	F	COOK	MS	G/M3	MFS	MFS	/SEC
20000	224	13	202.24		.46	999.9999	999.9999	7.24	285.20	.999
20500	230	14	204.33		.45	53.0085	90.3721	3.23	286.67	.008
20500	240	11	205.53		.45	50.8632	86.2151	5.67	287.51	.015
20750	236	10	206.62		.44	48.8160	82.2270	3.88	288.42	.006
21000	236	14	206.58		.44	46.8581	79.0216	5.14	288.25	.016
21500	234	18	207.78		.45	44.9806	75.4187	2.76	289.08	.017
21500	244	19	209.07		.47	43.1908	71.9885	6.64	289.94	.013
21250	247	18	211.25		.45	41.4843	68.4129	3.96	291.42	.007
21600	249	17	211.30		.45	39.8351	65.7097	4.69	291.52	.005
22250	253	12	211.40		.46	38.2735	63.1092	6.00	291.59	.004
22700	261	18	213.98		.45	36.7591	60.4631	2.97	291.99	.010
22750	272	18	212.68		.46	35.3516	57.9083	5.27	292.47	.013
23000	271	16	212.92		.47	33.9738	55.5876	5.61	292.64	.008
23500	263	15	213.24		.48	32.6534	53.1739	5.64	293.33	.009
23500	263	18	213.04		.47	31.3701	50.8551	5.27	294.09	.013
23750	253	20	215.73		.47	30.1807	48.7912	5.42	294.40	.007
24000	260	21	216.46		.46	29.0207	46.7066	5.96	295.06	.010
24250	264	21	217.10		.46	27.9103	44.7852	5.28	295.42	.007
24500	263	21	217.25		.49	26.8442	43.0470	7.35	295.60	.002
24750	258	22	217.23		.48	25.8191	41.4024	5.77	295.58	.008
25000	263	23	217.93		.50	24.8347	39.7002	3.79	296.06	.010
25250	252	24	218.80		.52	23.8911	38.0410	7.82	296.64	.004
25500	254	25	219.41		.52	22.9868	36.4983	8.59	297.06	.005
25750	256	25	219.91		.51	22.1187	35.0402	7.50	297.40	.004
26000	256	26	219.90		.51	21.2844	33.7199	5.32	297.39	.002
26250	254	26	221.15		.53	20.4840	32.2684	6.80	298.24	.004
26500	252	26	221.91		.53	19.7173	30.9546	7.59	298.75	.003
26750	251	27	222.06		.53	18.9807	29.7784	8.52	298.85	.002
27000	251	27	222.04		.51	18.2718	28.6684	5.92	298.84	.003
27250	253	28	221.21		.52	17.5890	27.6380	6.21	298.61	.006
27500	253	30	221.78		.54	16.9313	26.5959	7.07	298.66	.006
27750	253	31	222.97		.56	16.3000	25.4677	7.83	299.46	.005
28000	252	32	224.66		.57	15.6962	24.3400	8.32	300.59	.003
28250	253	32	225.86		.57	15.1182	23.3394	8.23	301.27	.002
28500	255	32	226.16		.57	14.5633	22.4331	8.96	301.60	.003
28750	256	32	226.47		.59	14.0287	21.5823	12.15	301.80	.003
29000	259	32	226.37		.53	13.5159	20.8008	5.49	301.74	.007
29250	261	33	226.44		.58	13.0210	20.0326	8.76	301.78	.010
29500	262	33	226.85		.60	12.5448	19.2657	9.25	302.05	.001
29750	261	33	228.03		.62	12.0873	18.4620	11.55	302.84	.004
30000	256	32	228.74		.60	11.6488	17.7414	9.77	303.31	.009
30250	251	32	228.28		.57	11.2267	17.1355	8.23	303.90	.011
30500	248	33	227.10		.57	10.8174	16.5943	9.79	302.22	.009
30750	245	34	225.51		.56	10.4213	16.0928	8.22	301.18	.007
31000	245	35	224.24		.59	10.0374	15.5944	9.86	300.31	.002
31250	246	34	223.52		.66	9.6661	15.0652	14.15	299.83	.005
31500	249	34	222.96		.62	9.3074	14.5432	10.18	299.45	.006
31750	248	34	222.54		.62	8.9614	14.0289	9.28	299.17	.002
32000	247	34	222.31		.65	8.6278	13.5207	7.66	299.02	.003
32250	245	34	223.54		.72	8.3075	12.9470	10.19	299.84	.004
32500	243	34	225.44		.76	8.0014	12.3648	13.68	301.12	.006
32750	241	35	227.27		.76	7.7084	11.8159	15.17	302.34	.006
33000	239	35	228.23		.73	7.4280	11.3387	12.41	302.97	.005
33250	237	36	228.91		.70	7.1588	10.8951	10.06	303.42	.004

ROCS 3

33500	236	36	229.60	-.72	6.9001	10.4699	12.38	303.88	.004
33750	236	36	230.16	-.72	6.6517	10.6881	11.75	304.25	.003
34000	237	36	231.15	-.75	6.4130	9.6615	12.42	304.90	.002
34250	239	36	232.53	-.80	6.1835	9.2644	14.43	305.81	.004
34500	240	36	233.86	-.79	5.9644	8.8831	14.52	306.69	.002
34750	240	37	235.19	-.79	5.7536	8.5227	13.38	307.56	.004
35000	243	38	236.51	-.83	5.5516	8.1776	14.84	308.42	.008
35250	245	39	237.96	-.85	5.3580	7.8442	15.46	309.37	.008
35500	248	40	239.50	-.86	5.1719	7.5231	15.57	310.36	.008
35750	250	40	241.55	-.86	4.9942	7.2030	15.21	311.69	.008
36000	253	41	243.25	-.82	4.8211	6.8931	14.49	313.11	.008
36250	254	41	245.48	-.86	4.6603	6.6137	16.45	314.22	.004
36500	255	42	247.19	-.86	4.5031	6.3446	18.32	315.30	.004
36750	255	41	247.56	-.82	4.3524	6.1250	16.26	315.54	.002
37000	254	41	247.90	-.79	4.2062	5.9119	14.10	315.76	.002
37250	253	40	249.44	-.86	4.0669	5.6801	15.26	316.74	.005
37500	252	39	251.11	-.92	3.9322	5.4550	16.40	317.81	.005
37750	252	38	253.40	-.95	3.8035	5.2292	18.69	319.24	.006
38000	251	36	255.67	-.92	3.6791	5.0131	20.78	320.67	.006
38250	252	34	256.65	-.94	3.5604	4.8330	20.39	321.28	.008
38500	252	32	257.59	-.82	3.4455	4.6592	19.95	321.87	.008
38750	253	31	257.98	-.87	3.3347	4.5031	19.82	322.12	.006
39000	254	30	257.91	-.82	3.2276	4.3598	19.92	322.07	.004
39250	255	29	257.86	-.88	3.1239	4.2205	20.03	322.04	.005
39500	252	28	257.98	-.82	3.0236	4.0832	20.11	322.11	.008
39750	263	27	258.09	-.91	2.9266	3.9503	20.18	322.19	.008
40000	262	27	258.72	-.95	2.8329	3.8140	20.48	322.61	.002
40250	270	26	259.64	-1.00	2.7424	3.6798	21.32	323.15	.007
40500	273	25	260.63	-1.04	2.6556	3.5480	21.84	323.76	.005
40750	272	25	262.04	-1.06	2.5712	3.4184	22.50	324.64	.003
41000	272	24	263.45	-1.02	2.4900	3.2927	23.06	325.51	.003
41250	270	23	264.53	-1.05	2.4118	3.1763	23.17	326.18	.006
41500	267	21	265.29	-1.01	2.3365	3.0682	23.86	326.45	.009
41750	262	19	266.06	-.96	2.2635	2.9639	22.56	327.12	.009
42000	252	17	265.81	-.95	2.1929	2.8739	22.54	326.98	.016
42250	238	15	265.31	-.95	2.1245	2.7897	22.61	326.66	.017
42500	222	14	264.80	-.95	2.0583	2.7079	22.75	326.35	.017
42750	210	15	264.53	-1.02	1.9938	2.6258	24.02	326.18	.012
43000	199	16	264.26	-1.08	1.9314	2.5462	25.29	326.01	.012
43250	191	18	264.08	-1.14	1.8710	2.4682	26.44	325.90	.012
43500	188	19	264.59	-1.17	1.8125	2.3865	26.44	326.21	.008
43750	185	21	265.09	-1.21	1.7559	2.3075	26.85	326.52	.008
44000	183	23	265.60	-1.24	1.7016	2.2312	27.06	326.84	.008
44250	183	25	266.30	-1.24	1.6482	2.1562	27.40	327.27	.007
44500	183	26	267.03	-1.23	1.5971	2.0837	27.77	327.72	.007
44750	183	28	267.76	-1.23	1.5476	2.0136	28.13	328.16	.007
45000	183	29	268.07	-1.25	1.4992	1.9490	28.79	328.36	.003
45250	184	29	268.09	-1.29	1.4535	1.8888	29.66	328.36	.001
45500	185	29	268.10	-1.33	1.4086	1.8304	30.54	328.37	.001
45750	185	29	268.11	-1.37	1.3651	1.7738	31.41	328.38	.001
46000	185	29	268.92	-1.41	1.3233	1.7142	31.89	328.88	.002
46250	185	28	269.74	-1.44	1.2827	1.6567	32.37	329.37	.002
46500	185	28	270.55	-1.48	1.2433	1.6010	32.85	329.87	.002
46750	185	27	271.35	-1.51	1.2053	1.5474	33.36	330.36	.002
47000	185	27	272.06	-1.49	1.1687	1.4966	34.10	330.79	.002
47250	184	26	272.78	-1.48	1.1333	1.4474	34.85	331.22	.002
47500	184	26	273.49	-1.46	1.0989	1.3998	35.59	331.66	.002
47750	184	25	274.21	-1.45	1.0656	1.3538	36.33	332.09	.002
48000	182	25	273.31	-1.45	1.0332	1.3170	36.56	331.55	.003
48250	180	25	272.31	-1.46	1.0018	1.2817	36.75	330.94	.003
48500	179	24	271.31	-1.47	.9714	1.2473	36.94	330.33	.003
48750	177	24	270.32	-1.48	.9419	1.2139	37.13	329.73	.003
4900	174	24	269.69	-1.54	.9131	1.1795	37.86	329.15	.004

49250	171	24	269.41	-1.65	.8851	1.1445	39.07	329.18	.005
49300	169	25	269.13	-1.77	.8879	1.1105	40.27	329.00	.005
49350	166	25	268.85	-1.88	.8316	1.0775	41.48	328.83	.005
50000	163	26	268.58	-1.99	.8060	1.0455	42.69	328.66	.005
50250	162	25	268.89	-2.05	.7813	1.0123	43.46	328.85	.002
50500	162	26	269.44	-2.08	.7574	.9793	44.05	329.19	.001
50750	161	26	270.00	-2.12	.7343	.9474	44.65	329.53	.001
51000	160	26	270.55	-2.15	.7118	.9166	45.25	329.87	.001
51250	160	25	271.11	-2.19	.6900	.8867	45.84	330.21	.001
51500	160	26	271.44	-2.21	.6689	.8585	46.39	330.41	.000
51750	161	26	271.72	-2.23	.6486	.8324	46.85	330.77	.002
52000	162	26	271.30	-2.24	.6288	.8075	47.32	330.33	.002
52250	163	26	271.23	-2.25	.6097	.7831	47.78	330.28	.002
52500	164	26	271.16	-2.27	.5911	.7595	48.24	330.24	.002
52750	164	26	271.09	-2.28	.5731	.7366	48.70	330.20	.002
53000	167	26	270.95	-2.33	.5557	.7145	49.64	330.11	.002
53250	167	26	270.76	-2.41	.5387	.6931	50.83	330.00	.002
53500	168	26	270.58	-2.48	.5223	.6725	52.03	329.89	.002
53750	169	26	270.40	-2.56	.5063	.6524	53.22	329.78	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.66	.002
54250	170	27	270.03	-2.71	.4759	.6140	55.61	329.55	.002
54500	171	26	269.77	-2.77	.4614	.5958	56.62	329.39	.003
54750	174	25	269.35	-2.90	.4472	.5784	57.26	329.14	.007
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.007
55250	180	22	268.52	-2.87	.4201	.5451	58.54	328.63	.007
55500	183	21	268.11	-2.90	.4072	.5292	59.18	328.38	.007
55750	187	20	267.69	-2.94	.3947	.5137	59.82	328.12	.007
56000	191	19	267.28	-2.97	.3826	.4987	60.46	327.87	.007
56250	196	18	266.85	-3.03	.3708	.4844	61.22	327.48	.007
56500	201	17	266.50	-3.16	.3591	.4712	62.29	326.77	.008
56750	207	16	266.35	-3.28	.3478	.4584	63.35	326.07	.008
57000	214	15	266.20	-3.41	.3369	.4460	64.47	325.36	.008
57250	221	14	266.05	-3.53	.3264	.4339	65.49	324.65	.008
57500	229	14	260.90	-3.66	.3161	.4221	66.55	323.93	.008
57750	237	14	259.75	-3.78	.3062	.4107	67.62	323.22	.008
58000	245	14	258.60	-3.91	.2966	.3995	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

ROCS 8

MAXIMUM ALTITUDE 61559

125000	255	81	247.33	-1.85	4.4566	6.2774	58.39	612.68	.001
125000	254	80	247.72	-1.81	4.2755	5.0127	49.55	613.17	.002
125000	253	79	249.04	-1.84	4.1024	5.7388	49.08	614.79	.004
125000	252	76	251.04	-1.92	3.9372	5.4638	54.20	617.25	.005
125000	251	72	253.81	-1.96	3.7807	5.1893	62.55	620.65	.006
125000	251	68	256.08	-1.97	3.6311	4.9399	67.75	623.42	.007
125000	252	64	257.73	-1.91	3.4888	4.7250	66.01	624.82	.008
125000	253	60	257.99	-1.87	3.3523	4.5267	64.95	625.75	.007
125000	254	58	257.90	-1.87	3.2215	4.3516	65.39	625.64	.004
125000	257	56	257.89	-1.88	3.0958	4.1820	65.78	625.63	.006
130000	261	54	258.03	-1.90	2.9750	4.0167	66.08	625.80	.008
131000	266	52	258.52	-1.94	2.8592	3.8530	67.26	626.39	.008
131000	270	51	259.58	-1.00	2.7482	3.6884	69.82	627.67	.007
133000	273	49	260.85	-1.04	2.6419	3.5285	72.58	629.20	.005
134000	272	48	262.57	-1.06	2.5406	3.3709	74.50	631.27	.003
135000	272	46	264.32	-1.07	2.4432	3.2214	76.42	633.35	.003
136000	267	41	265.15	-1.01	2.3505	3.0883	75.19	634.37	.002
137000	262	37	265.08	-1.96	2.2613	2.9607	73.97	635.48	.009
138000	247	32	265.70	-1.95	2.1756	2.8526	74.01	635.03	.016
139000	250	28	265.06	-1.95	2.0932	2.7511	74.30	634.26	.017
140000	243	27	264.62	-1.00	2.0137	2.6511	77.51	633.73	.014
141000	200	31	264.29	-1.07	1.9371	2.5535	82.58	633.33	.012
142000	190	35	264.15	-1.14	1.8635	2.4577	86.82	633.16	.011
143000	187	39	264.76	-1.19	1.7927	2.3559	87.65	633.90	.008
144000	184	43	265.38	-1.23	1.7286	2.2641	88.48	634.64	.008
145000	183	47	266.15	-1.24	1.6595	2.1722	89.65	635.56	.007
146000	183	51	267.03	-1.23	1.5969	2.0834	91.10	636.62	.007
147000	183	56	267.92	-1.23	1.5368	1.9983	92.55	637.67	.007
148000	184	57	268.08	-1.27	1.4791	1.9222	95.72	637.86	.002
149000	184	57	268.09	-1.32	1.4236	1.8500	99.22	637.88	.001
150000	182	57	268.11	-1.36	1.3703	1.7805	102.72	637.90	.001
151000	185	56	269.01	-1.41	1.3192	1.7084	104.79	638.96	.002
152000	185	55	270.00	-1.45	1.2700	1.6382	106.70	640.14	.002
153000	185	54	270.98	-1.50	1.2227	1.5719	108.62	641.31	.002
154000	185	52	271.82	-1.50	1.1775	1.5082	111.29	642.38	.002
155000	184	51	272.76	-1.48	1.1341	1.4485	114.27	643.41	.002
156000	184	50	273.63	-1.46	1.0923	1.3907	117.24	644.43	.002
157000	183	49	273.90	-1.45	1.0521	1.3381	119.57	644.74	.002
158000	181	48	272.68	-1.46	1.0132	1.2845	120.34	643.31	.003
159000	179	47	271.46	-1.47	.9758	1.2323	121.11	641.87	.003
160000	177	46	270.24	-1.48	.9398	1.2115	121.87	640.43	.003
161000	173	47	269.61	-1.57	.9048	1.1692	125.36	639.68	.004
162000	170	48	269.27	-1.71	.8711	1.1270	130.19	639.28	.005
163000	167	49	268.93	-1.85	.8386	1.0863	135.02	638.87	.005
164000	163	50	268.59	-1.92	.8073	1.0471	139.86	638.47	.005
165000	162	51	268.98	-2.06	.7773	1.0067	142.93	638.93	.002
166000	161	51	269.66	-2.10	.7484	.9668	145.31	639.24	.001
167000	160	51	270.34	-2.14	.7205	.9286	147.69	640.54	.001
168000	160	51	271.01	-2.18	.6938	.8918	150.07	641.34	.001
169000	160	51	271.44	-2.21	.6680	.8574	152.27	641.85	.000
170000	163	50	271.36	-2.23	.6433	.8232	154.12	641.75	.002
171000	163	50	271.27	-2.25	.6195	.7956	155.97	641.64	.002
172000	164	50	271.18	-2.26	.5966	.7664	157.82	641.54	.002
173000	166	50	271.10	-2.28	.5745	.7383	159.67	641.44	.002
174000	167	50	270.92	-2.34	.5532	.7114	161.41	641.23	.002
175000	168	50	270.70	-2.44	.5327	.6856	168.18	640.97	.002
176000	169	51	270.47	-2.53	.5130	.6607	172.96	640.70	.002
177000	169	51	270.25	-2.62	.4940	.6368	177.74	640.44	.002
178000	170	52	270.03	-2.71	.4757	.6137	182.51	640.17	.002
179000	172	51	269.67	-2.78	.4580	.5916	186.26	639.75	.003
180000	175	47	269.17	-2.82	.4409	.5706	188.82	639.15	.007
181000	179	44	268.66	-2.86	.4244	.5503	191.37	638.55	.007
182000	183	41	268.15	-2.90	.4086	.5308	193.93	637.95	.007

183000	187	48	267.64	-2.94	.3933	.5120	196.49	657.34	.007
184000	193	36	267.14	-2.98	.3786	.4938	197.05	636.74	.007
185000	198	33	266.01	-3.10	.3643	.4771	202.78	635.40	.008
186000	205	31	264.61	-3.25	.3504	.4613	207.05	633.72	.008
187000	213	29	263.21	-3.41	.3370	.4461	211.32	632.04	.008
188000	222	27	261.81	-3.56	.3242	.4314	215.58	630.36	.008
189000	232	27	260.41	-3.71	.3118	.4171	219.85	628.67	.008
190000	242	27	259.01	-3.86	.2997	.4034	224.11	626.97	.008
190714	249	27	258.01	-3.97	.2917	.3939	227.16	625.76	.008

MAXIMUM ALTITUDE 201965

ROCS 3

LAKE CANNONVILLE AFS, FLORIDA
 05/17 18 JUN 1984
 SUPER FUEL DATA/SONDE FVN-100
 TEST NUMBER 000000
 ASCENT-MGR. 4029

105 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 MSB

58000
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TEST NUMBER 0000
CAFE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

SUPER LOKI PWN-100

ALT FEET	DIR DEG	SPD MPS	TEMP K	TEMP C	PRESS MBS	DENSITY G/M3	RF MFS	VS MFS	SHR /SEC
20000	224	11	202.24	-1.46	933.9997	993.9997	7.24	285.20	.999
21000	236	14	206.58	-.44	46.8581	79.0216	5.14	288.25	.003
22000	249	17	211.30	-.45	39.8531	65.7097	4.69	291.52	.005
23000	271	16	212.92	-.47	33.9738	55.5876	5.61	292.64	.006
24000	260	21	216.46	-.48	29.0202	46.7066	5.90	295.06	.006
25000	253	23	217.93	-.50	24.8342	39.7002	3.79	296.06	.003
26000	256	26	219.90	-.51	21.2844	33.7199	5.32	297.39	.003
27000	251	27	222.04	-.51	18.2718	28.6684	5.92	298.84	.003
28000	252	32	224.66	-.57	15.6962	24.3400	8.32	300.59	.005
29000	259	32	226.37	-.53	13.5159	20.8008	5.49	301.74	.003
30000	256	32	228.74	-.60	11.6488	17.7414	9.77	303.31	.001
31000	245	35	224.24	-.59	10.0374	15.5944	9.86	300.31	.007
32000	242	34	222.31	-.65	8.6228	13.5202	7.66	299.02	.001
33000	239	35	228.23	-.73	7.4280	11.3387	12.41	302.97	.005
34000	232	36	231.15	-.75	6.4130	9.6655	12.42	304.90	.001
35000	243	38	236.51	-.83	5.5516	8.1776	14.84	308.42	.004
36000	253	41	243.75	-.87	4.8231	6.8933	14.69	313.11	.008
37000	254	41	247.90	-.79	4.2067	5.9119	14.10	315.76	.001
38000	253	36	255.67	-.99	3.6291	5.0131	20.78	320.67	.006
39000	254	30	257.91	-.87	3.2276	4.3598	19.92	322.07	.006
40000	262	27	258.72	-.95	2.8329	3.8140	20.68	322.61	.007
41000	272	24	263.45	-1.07	2.4900	3.2927	23.06	325.51	.004
42000	252	17	265.83	-.95	2.1929	2.8739	22.54	326.98	.010
43000	199	16	264.26	-1.08	1.9314	2.5462	25.29	326.01	.015
44000	183	23	265.60	-1.24	1.7010	2.2312	27.06	326.84	.009
45000	183	29	268.07	-1.25	1.4997	1.9490	28.79	328.36	.006
46000	185	29	268.92	-1.41	1.3233	1.7142	31.82	328.88	.001
47000	185	27	272.06	-1.49	1.1687	1.4966	34.10	330.79	.002
48000	182	25	273.31	-1.45	1.0332	1.3170	36.56	331.55	.002
49000	174	24	269.69	-1.54	.9131	1.1795	37.86	329.35	.003
50000	163	26	268.58	-1.92	.8060	1.0455	42.69	328.66	.003
51000	160	26	270.55	-2.15	.7118	.9166	45.25	329.87	.001
52000	162	26	271.30	-2.24	.6288	.8075	47.32	330.33	.001
53000	167	26	270.95	-2.33	.5557	.7145	49.64	330.11	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.66	.002
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.004
56000	191	19	267.28	-2.97	.3826	.4987	60.46	327.87	.007
57000	214	15	263.20	-3.41	.3369	.4460	64.42	325.36	.008
58000	245	14	258.60	-3.91	.2966	.3995	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

ROCS 3

MAXIMUM ALTITUDE 61552

TEST NUMBER 0000
CAFE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

13:16:40 29 MAR, 1984

ROCKET DATA

PAGE

SUPER TIME	MIN	SEC	TEMP	TEMP	PRESS	DENSITY	NR	VS	SHR
GEOMA	DEG	MS	-K	CURR	MBS	G/CM3	MPG	MPG	/SEC
20000	224	13	202.24	-46	999.9999	999.9999	7.24	285.20	.999
20050	230	14	204.33	-45	53.0065	90.3771	5.23	286.67	.008
20500	240	11	205.53	-45	50.8632	86.2151	5.67	287.51	.015
20750	236	10	206.82	-44	48.8160	82.2270	3.88	288.42	.006
21000	232	14	208.58	-44	46.8581	79.0716	5.14	288.25	.016
21250	234	18	207.78	-45	44.9806	75.4187	2.76	289.08	.017
21500	244	19	209.02	-47	43.1908	71.9883	6.64	289.94	.013
21750	247	18	211.25	-45	41.4843	68.4129	3.96	291.49	.007
22000	249	17	211.30	-45	39.8551	65.7097	4.69	291.52	.005
22250	253	17	211.40	-46	38.2906	63.1007	6.00	291.59	.004
22500	261	18	211.98	-45	36.7381	60.4611	2.97	291.99	.010
22750	272	18	212.68	-46	35.3516	57.9083	5.27	292.47	.013
23000	271	16	212.92	-47	33.9738	55.5876	5.61	292.64	.008
23250	263	16	213.94	-48	32.6534	53.1739	5.64	293.33	.009
23500	253	18	215.04	-47	31.3901	50.8551	5.27	294.09	.013
23750	253	20	215.50	-47	30.1807	48.7912	5.42	294.40	.007
24000	260	21	216.46	-48	29.0207	46.7066	5.90	295.06	.010
24250	264	21	217.10	-48	27.9103	44.7882	5.28	295.49	.007
24500	263	21	217.25	-49	26.8442	43.0470	7.36	295.60	.002
24750	258	22	217.23	-48	25.8191	41.4074	5.77	295.58	.008
25000	253	23	217.93	-50	24.8342	39.7002	3.73	296.06	.010
25250	252	24	218.80	-52	23.8911	38.0410	7.62	296.64	.004
25500	254	25	219.41	-52	22.9868	36.4883	8.59	297.06	.005
25750	256	25	219.91	-51	22.1187	35.0402	7.50	297.40	.004
26000	256	26	219.90	-51	21.2844	33.7199	5.32	297.39	.002
26250	254	26	221.15	-53	20.4840	32.2684	6.80	298.24	.004
26500	252	26	221.91	-53	19.7123	30.9546	7.59	298.75	.003
26750	251	27	222.06	-53	18.9807	29.7784	8.52	298.85	.002
27000	251	27	222.04	-51	18.2718	28.6684	5.92	298.84	.003
27250	253	29	221.71	-52	17.5890	27.6380	6.21	298.61	.006
27500	253	30	221.78	-54	16.9313	26.5959	7.07	298.66	.006
27750	253	31	222.97	-56	16.3000	25.4677	7.83	299.46	.005
28000	252	32	224.66	-57	15.6962	24.3400	8.32	300.59	.003
28250	253	32	225.66	-57	15.1182	23.3394	8.23	301.27	.002
28500	255	32	226.16	-57	14.5633	22.4331	8.96	301.60	.003
28750	256	32	226.47	-59	14.0297	21.5823	12.15	301.80	.003
29000	259	32	226.37	-53	13.5159	20.8008	5.49	301.74	.007
29250	263	33	226.44	-58	13.0210	20.0326	8.76	301.78	.010
29500	262	33	226.85	-60	12.5448	19.2657	9.25	302.05	.001
29750	261	33	228.03	-62	12.0873	18.4670	11.55	302.84	.004
30000	256	32	228.74	-60	11.6488	17.7414	9.77	303.31	.002
30250	251	32	228.28	-57	11.2261	17.1325	8.23	303.00	.011
30500	248	33	227.10	-57	10.8174	16.5943	9.79	302.22	.009
30750	245	34	225.53	-56	10.4213	16.0978	8.99	301.18	.007
31000	245	35	224.24	-59	10.0374	15.5944	9.86	300.31	.002
31250	246	34	223.52	-66	9.6661	15.0659	14.15	299.83	.005
31500	249	34	222.96	-62	9.3074	14.5432	10.18	299.45	.006
31750	248	34	222.54	-62	8.9614	14.0289	9.28	299.17	.002
32000	247	34	222.31	-65	8.6278	13.5207	7.66	299.02	.003
32250	245	34	223.54	-72	8.3075	12.9470	10.19	299.84	.004
32500	243	34	223.44	-76	8.0014	12.3648	13.68	301.12	.006

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32750	241	35	227.27	-76	7.7084	11.8159	15.17	302.34	.006
33000	239	35	228.23	-73	7.4280	11.3387	12.41	302.97	.005
33250	237	36	229.91	-70	7.1588	10.8951	10.06	303.42	.004
33500	236	36	229.40	-72	6.9601	10.4699	12.38	303.88	.004
33750	236	36	230.16	-72	6.6517	10.0681	11.75	304.25	.003
34000	237	36	231.15	-75	6.4130	9.6655	12.42	304.90	.002
34250	239	36	232.53	-80	6.1836	9.2644	14.43	305.81	.004
34500	239	36	233.86	-79	5.9644	8.8851	13.57	306.69	.002
34750	240	37	235.19	-79	5.7536	8.5227	13.38	307.56	.004
35000	241	38	236.51	-83	5.5514	8.1724	14.84	308.42	.008
35250	245	39	237.96	-85	5.3580	7.8442	15.46	309.37	.008
35500	248	40	239.50	-86	5.1719	7.5231	15.57	310.36	.008
35750	250	40	241.55	-86	4.9942	7.2030	15.21	311.69	.008
36000	253	41	243.75	-87	4.8231	6.8933	14.69	313.11	.008
36250	254	41	245.48	-86	4.6603	6.6137	16.45	314.22	.004
36500	255	42	247.19	-86	4.5031	6.3466	18.32	315.30	.004
36750	255	41	247.56	-82	4.3524	6.1250	16.26	315.54	.002
37000	254	41	247.90	-79	4.2067	5.9119	14.10	315.76	.002
37250	253	40	249.44	-86	4.0669	5.6801	15.26	316.74	.005
37500	252	39	251.13	-92	3.9322	5.4550	16.60	317.81	.005
37750	252	38	253.40	-95	3.8035	5.2292	18.69	319.24	.006
38000	251	36	255.67	-92	3.6791	5.0131	20.78	320.67	.006
38250	252	34	256.65	-94	3.5604	4.8330	20.39	321.28	.008
38500	252	32	257.59	-89	3.4455	4.6599	19.95	321.87	.008
38750	253	31	257.98	-87	3.3347	4.5031	19.82	322.12	.006
39000	254	30	257.91	-87	3.2276	4.3594	19.92	322.07	.004
39250	255	29	257.86	-88	3.1239	4.2205	20.03	322.04	.005
39500	259	28	257.98	-89	3.0236	4.0832	20.11	322.11	.008
39750	263	27	258.09	-91	2.9266	3.9503	20.18	322.19	.008
40000	267	27	258.77	-95	2.8329	3.8140	20.68	322.61	.007
40250	270	26	259.64	-100	2.7424	3.6798	21.32	323.15	.007
40500	273	25	260.63	-104	2.6550	3.5490	21.94	323.76	.005
40750	272	25	262.04	-106	2.5712	3.4184	22.50	324.64	.003
41000	272	24	263.45	-107	2.4900	3.2922	23.06	325.51	.003
41250	270	23	264.53	-105	2.4118	3.1763	23.17	326.18	.006
41500	267	21	265.29	-101	2.3365	3.0682	22.86	326.65	.009
41750	262	19	266.06	-96	2.2635	2.9639	22.56	327.12	.009
42000	252	17	265.83	-95	2.1929	2.8739	22.54	326.98	.016
42250	238	15	265.31	-95	2.1245	2.7897	22.61	326.66	.017
42500	222	14	264.80	-95	2.0583	2.7079	22.75	326.35	.017
42750	210	15	264.53	-102	1.9938	2.6258	24.02	326.18	.012
43000	192	16	264.26	-108	1.9314	2.5462	25.29	326.01	.012
43250	191	18	264.08	-114	1.8710	2.4682	26.44	325.90	.012
43500	188	19	264.59	-117	1.8125	2.3865	26.64	326.21	.008
43750	185	21	265.09	-121	1.7559	2.3075	26.85	326.52	.008
44000	183	23	265.60	-124	1.7010	2.2312	27.06	326.84	.008
44250	183	25	266.30	-124	1.6482	2.1562	27.40	327.27	.007
44500	183	26	267.03	-123	1.5971	2.0837	27.77	327.72	.007
44750	183	28	267.76	-123	1.5476	2.0136	28.13	328.16	.007
45000	183	29	268.07	-125	1.4977	1.9490	28.79	328.36	.003
45250	184	29	268.09	-129	1.4535	1.8888	29.66	328.36	.001
45500	183	22	268.10	-133	1.4086	1.8304	30.54	328.37	.001
45750	185	29	268.11	-137	1.3651	1.7738	31.41	328.38	.001
46000	185	29	268.92	-141	1.3233	1.7142	31.82	328.88	.002
46250	185	28	269.74	-144	1.2827	1.6567	32.37	329.37	.002
46500	185	28	270.55	-148	1.2433	1.6010	32.85	329.87	.002

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4670	185	27	271.35	-1.51	1.2053	1.5474	33.36	330.36	.002
47000	185	27	272.06	-1.49	1.1487	1.4966	34.10	330.79	.002
47500	184	26	272.78	-1.48	1.1333	1.4774	34.85	331.22	.002
47500	184	26	273.49	-1.46	1.0984	1.3994	35.89	331.66	.002
47500	184	25	274.21	-1.45	1.0656	1.3538	36.33	332.09	.002
48000	187	25	273.41	-1.45	1.0332	1.3170	36.56	331.55	.003
48500	180	25	272.31	-1.46	1.0018	1.2817	36.75	330.94	.003
48500	177	24	273.31	-1.47	.9714	1.2473	36.94	330.33	.003
48500	177	24	270.32	-1.48	.9419	1.2139	37.13	329.73	.003
49000	174	24	269.49	-1.54	.9131	1.1793	37.86	329.35	.004
49500	171	24	269.41	-1.65	.8851	1.1445	39.07	329.18	.005
49500	169	25	269.13	-1.77	.8579	1.1105	40.27	329.00	.005
49750	166	25	268.85	-1.88	.8316	1.0775	41.48	328.83	.005
50000	163	26	268.58	-1.99	.8060	1.0455	42.69	328.66	.005
50500	162	26	268.89	-2.05	.7813	1.0123	43.46	328.85	.002
50500	162	26	269.44	-2.08	.7574	.9793	44.06	329.18	.004
50750	161	26	270.00	-2.12	.7343	.9474	44.65	329.53	.001
51000	160	26	270.55	-2.15	.7119	.9164	45.25	329.87	.001
51250	160	26	271.11	-2.19	.6900	.8867	45.84	330.21	.001
51500	160	26	271.44	-2.21	.6687	.8585	46.39	330.41	.000
51750	161	25	271.37	-2.23	.6486	.8326	46.85	330.37	.002
52000	162	26	271.30	-2.24	.6288	.8075	47.32	330.33	.002
52250	163	26	271.23	-2.25	.6097	.7831	47.78	330.28	.002
52500	164	26	271.16	-2.27	.5911	.7593	48.24	330.24	.002
52750	166	26	271.09	-2.28	.5731	.7366	48.70	330.20	.002
53000	167	26	270.93	-2.33	.5557	.7145	49.44	330.11	.002
53250	167	26	270.76	-2.41	.5387	.6931	50.83	330.00	.002
53500	168	26	270.58	-2.48	.5223	.6725	52.03	329.82	.002
53750	169	26	270.40	-2.56	.5063	.6524	53.22	329.78	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.44	.002
54250	170	27	270.03	-2.71	.4759	.6140	55.61	329.55	.002
54500	171	26	269.77	-2.77	.4614	.5958	56.62	329.39	.003
54750	174	25	269.35	-2.80	.4472	.5784	57.26	329.14	.007
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.007
55250	180	22	268.52	-2.87	.4201	.5451	58.54	328.63	.007
55500	183	21	268.11	-2.90	.4072	.5292	59.18	328.38	.007
55750	187	20	267.69	-2.94	.3947	.5137	59.82	328.12	.007
56000	191	19	267.28	-2.97	.3826	.4982	60.46	327.87	.007
56250	196	18	266.65	-3.03	.3708	.4844	61.22	327.48	.007
56500	201	17	265.50	-3.16	.3591	.4712	62.23	326.77	.008
56750	207	16	264.35	-3.28	.3478	.4584	63.35	326.07	.008
57000	214	15	263.20	-3.41	.3369	.4460	64.42	325.36	.008
57250	221	14	262.05	-3.53	.3264	.4339	65.49	324.65	.008
57500	229	14	260.90	-3.66	.3161	.4221	66.55	323.93	.008
57750	237	14	259.75	-3.78	.3062	.4107	67.62	323.22	.008
58000	245	14	258.60	-3.91	.2966	.3993	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

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MAXIMUM ALTITUDE 61559

TEST NUMBER 0000
CAFE CANAVERAL AFS, FLORIDA
15152 18 JAN 1984

SUPER LOG1 FUN-10D

13116140 29 MAR, 1984

ROCKET DATA

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ALT LALRFL	DTK DLG	SFD NIS	TEMP N	TEMP C/LK	PRESS MRS	DENSITY G/M3	RF NIS	VS NIS	SHR /SLC
66000	225	27	203.03	-46	54.1967	52.9960	14.42	555.10	.999
67000	249	23	205.17	-46	51.5245	47.4883	20.61	558.02	.012
68000	216	19	206.73	-44	49.0046	42.5830	11.28	560.14	.007
69000	235	28	206.68	-44	46.6190	38.5813	16.91	560.07	.015
70000	238	37	208.44	-45	44.3550	34.1346	8.36	562.45	.016
71000	247	36	210.03	-46	42.2184	30.6286	12.85	564.59	.009
72000	248	33	211.29	-46	40.2032	26.2887	25.67	566.28	.005
73000	253	32	211.40	-46	38.2878	22.0961	19.69	566.43	.005
74000	263	35	212.16	-46	36.4660	18.8804	13.41	567.44	.011
75000	273	33	212.96	-45	34.7381	15.8271	10.74	568.52	.010
76000	266	31	213.52	-48	33.0963	13.5993	20.60	569.22	.007
77000	254	35	214.92	-47	31.5406	11.1254	16.81	571.13	.013
78000	253	39	215.52	-47	30.0649	8.5998	16.28	571.92	.007
79000	261	40	216.70	-48	28.6637	6.0815	18.60	573.49	.010
80000	265	41	217.23	-48	27.3334	4.8364	19.73	574.18	.004
81000	259	42	217.18	-48	26.0661	4.1870	18.72	574.13	.007
82000	253	45	217.90	-50	24.8587	3.7446	12.79	575.07	.010
83000	253	47	218.91	-52	23.7130	3.7380	26.08	576.40	.004
84000	255	49	219.70	-52	22.6240	3.8754	29.56	577.44	.004
85000	257	50	219.89	-49	21.5875	34.2022	13.55	577.69	.003
86000	254	51	220.98	-53	20.6005	32.4748	23.21	579.13	.004
87000	252	51	221.92	-53	19.6643	30.8699	26.08	580.35	.003
88000	251	52	222.10	-51	18.7724	29.4464	23.19	580.58	.002
89000	251	54	221.89	-52	17.9210	28.1366	20.64	580.32	.004
90000	252	58	221.62	-53	17.1024	26.8927	22.17	579.96	.006
91000	253	61	222.87	-56	16.3324	25.5302	25.73	581.59	.005
92000	252	62	224.87	-57	15.5982	24.1654	28.28	584.20	.003
93000	254	62	225.88	-56	14.9014	22.9826	22.90	585.51	.003
94000	255	62	226.41	-60	14.2379	21.9077	41.59	586.20	.002
95000	258	63	226.38	-54	13.6048	20.9369	19.31	586.15	.005
96000	263	64	226.45	-58	12.9592	19.9994	28.76	586.25	.010
97000	262	64	227.16	-60	12.4230	19.0525	32.33	587.16	.002
98000	259	63	228.38	-61	11.8732	18.1130	35.34	588.74	.006
99000	253	63	228.56	-58	11.3508	17.3017	28.36	588.97	.010
100000	248	64	227.20	-57	10.8455	16.6360	31.37	587.22	.010
101000	245	67	225.28	-56	10.3670	16.0317	27.82	584.73	.007
102000	245	67	223.97	-63	9.9027	15.4037	39.28	583.02	.001
103000	248	66	223.19	-64	9.4572	14.7616	38.90	582.07	.005
104000	249	66	222.61	-62	9.0306	14.1325	30.28	581.26	.002
105000	247	66	222.31	-65	8.6275	13.5123	24.99	580.86	.003
106000	245	67	224.00	-74	8.2340	12.8052	37.54	583.02	.005
107000	242	67	226.27	-76	7.8668	12.1170	47.11	586.02	.006
108000	239	68	228.00	-74	7.5181	11.4873	45.02	588.25	.005
109000	237	69	228.83	-70	7.1870	10.9416	32.17	589.33	.005
110000	236	71	229.67	-72	6.8717	10.4236	40.83	590.40	.004
111000	236	69	230.35	-72	6.5713	9.9385	37.72	591.27	.003
112000	238	70	231.91	-78	6.2856	9.4425	44.38	593.27	.004
113000	239	71	233.55	-79	6.0141	8.9709	45.24	595.37	.003
114000	240	72	235.17	-79	5.7532	8.5266	43.83	597.43	.003
115000	243	74	236.78	-83	5.5104	8.1076	49.68	599.47	.008
116000	246	76	238.62	-85	5.2776	7.7052	50.88	601.79	.008
117000	249	78	240.77	-86	5.0560	7.3158	50.49	604.50	.008
118000	253	79	243.46	-87	4.8457	6.9340	48.43	607.87	.008

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119000	254	80	245.53	.86	4.6467	6.5905	54.48	610.57	.004
120000	255	81	247.43	-.85	4.4566	6.2774	58.39	612.68	.002
121000	256	80	247.72	-.81	4.2755	6.0127	49.55	613.17	.002
122000	257	79	249.44	-.84	4.1024	5.7388	49.68	614.79	.004
123000	252	76	251.04	-.92	3.9372	5.4638	54.20	617.35	.005
124000	252	77	253.81	-.94	3.7807	5.1893	62.55	620.65	.006
125000	251	68	256.08	-.97	3.6311	4.9399	67.75	623.42	.007
126000	252	64	257.23	-.91	3.4888	4.7250	66.01	624.82	.008
127000	253	50	257.99	-.87	3.3523	4.5267	64.95	625.75	.007
128000	254	58	252.90	-.82	3.2215	4.3516	65.39	625.64	.004
129000	257	56	257.89	-.88	3.0958	4.1820	65.78	625.63	.006
130000	261	54	258.03	-.90	2.9750	4.0167	66.09	625.80	.008
131000	266	52	258.52	-.94	2.8592	3.8530	67.26	626.39	.008
132000	270	51	259.58	-1.00	2.7482	3.6884	69.82	627.67	.007
133000	273	49	260.85	-1.04	2.6419	3.5285	72.28	629.20	.005
134000	272	48	262.52	-1.04	2.5406	3.3708	74.50	631.22	.003
135000	272	46	264.22	-1.07	2.4432	3.2214	76.42	633.25	.003
136000	267	41	265.15	-1.01	2.3505	3.0883	75.19	634.37	.009
137000	262	37	265.08	-.96	2.2613	2.9607	73.97	635.48	.009
138000	249	32	265.70	-.93	2.1756	2.8326	74.01	635.63	.016
139000	230	28	265.06	-.95	2.0932	2.7511	74.30	634.26	.017
140000	213	22	264.62	-1.00	2.0137	2.6511	72.51	633.73	.014
141000	200	31	264.29	-1.07	1.9371	2.5535	82.58	633.33	.012
142000	190	35	264.15	-1.14	1.8635	2.4572	86.82	633.16	.011
143000	187	39	264.76	-1.19	1.7927	2.3589	87.65	633.90	.008
144000	184	43	265.38	-1.23	1.7246	2.2641	88.48	634.64	.008
145000	183	47	266.15	-1.24	1.6595	2.1722	89.65	635.56	.007
146000	183	51	267.03	-1.23	1.5949	2.0874	91.10	636.62	.007
147000	183	56	267.92	-1.23	1.5368	1.9983	92.55	637.67	.007
148000	184	57	268.08	-1.27	1.4791	1.9222	95.72	637.86	.002
149000	184	57	268.09	-1.32	1.4236	1.8500	99.22	637.88	.001
150000	185	57	268.11	-1.36	1.3703	1.7805	102.72	637.90	.001
151000	185	56	269.01	-1.41	1.3192	1.7084	104.79	638.96	.002
152000	185	55	270.00	-1.45	1.2700	1.6387	104.70	640.14	.002
153000	185	54	270.98	-1.50	1.2227	1.5719	108.62	641.31	.002
154000	183	52	271.89	-1.50	1.1725	1.5087	111.29	642.38	.002
155000	184	51	272.76	-1.48	1.1341	1.4485	114.27	643.41	.002
156000	184	50	273.63	-1.46	1.0923	1.3907	117.24	644.43	.002
157000	183	49	273.90	-1.45	1.0521	1.3381	119.57	644.74	.002
158000	181	48	272.68	-1.46	1.0132	1.2945	120.34	643.31	.003
159000	179	47	271.46	-1.47	.9758	1.2523	121.11	641.87	.003
160000	177	46	270.24	-1.48	.9398	1.2115	121.87	640.43	.003
161000	173	47	269.61	-1.57	.9048	1.1692	125.36	639.68	.004
162000	170	48	269.27	-1.71	.8711	1.1270	130.19	639.28	.005
163000	167	49	268.93	-1.85	.8386	1.0863	135.02	638.87	.005
164000	161	50	268.59	-1.99	.8073	1.0421	139.86	638.42	.005
165000	162	51	268.98	-2.06	.7773	1.0067	142.93	638.93	.002
166000	161	51	269.66	-2.10	.7484	.9668	145.31	639.74	.001
167000	160	51	270.34	-2.14	.7205	.9286	147.69	640.54	.001
168000	160	51	271.01	-2.18	.6938	.8918	150.07	641.34	.001
169000	160	51	271.44	-2.21	.6680	.8574	152.27	641.85	.000
170000	161	50	271.36	-2.23	.6433	.8259	154.12	641.75	.002
171000	163	50	271.27	-2.25	.6195	.7956	155.97	641.64	.002
172000	164	50	271.18	-2.26	.5966	.7664	157.82	641.54	.002
173000	166	50	271.10	-2.28	.5745	.7383	159.67	641.44	.002
174000	167	50	270.92	-2.34	.5532	.7114	163.41	641.23	.002

B-97

ROCS 3

ROCS 3

175000	168	50	270.70	-2.44	.5327	.6656	168.18	640.97	.002
176000	169	51	270.47	-2.53	.5130	.6607	172.96	640.70	.002
177000	169	51	270.25	-2.62	.4940	.6368	177.74	640.44	.002
178000	170	52	270.03	-2.71	.4752	.6132	182.51	640.17	.002
179000	172	51	269.67	-2.78	.4580	.5916	186.26	639.75	.003
180000	175	47	269.17	-2.82	.4409	.5706	188.82	639.15	.007
181000	179	44	268.66	-2.86	.4244	.5503	191.37	638.55	.007
182000	183	41	268.15	-2.90	.4086	.5308	193.93	637.95	.007
183000	187	38	267.64	-2.94	.3933	.5120	196.49	637.34	.007
184000	193	36	267.14	-2.98	.3786	.4938	199.05	636.74	.007
185000	199	33	266.61	-3.10	.3643	.4771	202.78	635.40	.008
186000	205	31	264.61	-3.25	.3504	.4613	207.05	633.72	.008
187000	213	29	263.21	-3.41	.3370	.4461	211.32	632.04	.008
188000	222	27	261.81	-3.56	.3242	.4314	215.58	630.36	.008
189000	232	27	260.41	-3.71	.3118	.4171	219.85	628.67	.008
190000	242	27	259.01	-3.86	.2992	.4034	224.11	626.97	.008
190714	249	27	258.01	-3.97	.2917	.3939	227.16	625.76	.008

MAXIMUM ALTITUDE 201945

B-98

ROCS 3

ATTACHMENT 4
OUTPUT DISK FILE

PASS 1

B-99

1

TEST NUMBER 0000
CAFE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

SUPER LUKI FMN-100

ALT GEOM	DEG	SPD MPS	TEMP K	TEMP COKR	PRESS MBS	DENSITY G/M3	RF MFS	VS MFS	SHR Z/SEC
20000	224	13	202.24	-46	577.8977	992.9277	2.24	285.20	.999
21000	236	14	206.58	-44	46.8581	79.0216	5.14	288.25	.003
22000	248	17	211.30	-45	39.8561	65.7097	4.69	291.52	.005
23000	271	16	212.92	-47	33.9738	55.5876	5.61	292.64	.006
24000	260	21	216.45	-48	29.0207	46.7066	5.90	295.06	.006
25000	253	23	217.93	-50	24.8342	39.7002	3.79	296.06	.003
26000	256	26	219.90	-51	21.2844	33.7192	5.32	297.39	.003
27000	251	27	222.04	-51	18.2718	28.6684	5.92	298.84	.003
28000	252	32	224.66	-57	15.6962	24.3400	8.32	300.59	.005
29000	259	32	226.37	-53	13.5159	20.8008	5.49	301.74	.003
30000	256	32	228.74	-60	11.6488	17.7414	9.77	303.31	.001
31000	245	35	224.24	-59	10.0374	15.5944	9.86	300.31	.007
32000	247	34	222.31	-65	8.6278	13.5207	7.66	299.62	.001
33000	239	35	228.23	-73	7.4280	11.3387	12.41	302.97	.005
34000	237	36	231.15	-75	6.4130	9.6655	12.42	304.90	.001
35000	243	38	236.51	-83	5.5316	8.1776	14.84	308.42	.004
36000	253	41	243.25	-87	4.8231	6.8933	14.69	313.11	.008
37000	254	41	247.90	-79	4.2067	5.9119	14.10	315.76	.001
38000	251	36	255.67	-92	3.6791	5.0131	20.78	320.67	.004
39000	254	30	257.91	-87	3.2276	4.3598	19.92	322.07	.006
40000	267	27	258.27	-95	2.8323	3.8140	20.68	322.61	.007
41000	272	24	263.45	-107	2.4900	3.2927	23.06	325.51	.004
42000	252	17	265.83	-95	2.1929	2.8739	22.54	326.98	.010
43000	199	16	264.26	-108	1.9314	2.5462	25.29	326.01	.015
44000	183	23	265.60	-124	1.7010	2.2332	27.06	326.84	.009
45000	183	29	268.07	-125	1.4997	1.9490	28.79	328.36	.006
46000	185	29	268.92	-141	1.3733	1.7142	31.89	328.88	.001
47000	185	27	272.06	-149	1.1687	1.4966	34.10	330.79	.002
48000	182	25	273.31	-145	1.0332	1.3170	36.56	331.55	.002
49000	174	24	269.69	-154	.9131	1.1795	37.86	329.35	.003
50000	163	26	268.58	-192	.8060	1.0455	42.69	328.66	.005
51000	160	26	270.55	-215	.7118	.9166	45.25	329.87	.001
52000	162	26	271.30	-224	.6288	.8075	47.32	330.33	.001
53000	167	26	270.95	-233	.5557	.7145	49.64	330.11	.002
54000	170	26	270.21	-263	.4509	.6329	54.41	329.66	.002
55000	177	24	268.94	-284	.4335	.5615	57.90	328.89	.004
56000	191	19	267.28	-297	.3826	.4987	60.46	327.87	.007
57000	214	15	263.20	-341	.3369	.4460	64.42	325.36	.008
58000	245	14	258.60	-391	.2366	.3925	68.68	322.50	.008
58129	249	14	258.01	-597	.2917	.3939	69.24	322.13	.008

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ROCS 3

MAXIMUM ALTITUDE 41559

TEST NUMBER 0000
CAFE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

14:29:50 29 MAR, 1984

PASS 1 OUTPUT DATA FILE

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ROCS 3

PASS 1 OUTPUT DATA FILE

14:27:30 27 MAR, 1984

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32750	241	35	227.27	-7.6	7.7084	11.8159	15.17	302.34	.006
33000	249	35	228.23	-7.3	7.4700	11.3387	12.41	302.97	.005
33250	257	36	228.71	-7.0	7.1588	10.8951	10.06	303.42	.004
33500	264	36	229.60	-7.2	6.9001	10.4699	12.38	303.88	.004
33750	273	36	230.16	-7.2	6.6517	10.0681	11.75	304.25	.003
34000	281	36	231.15	-7.5	6.4130	9.6655	12.42	304.90	.002
34250	289	35	232.53	-8.0	6.1836	9.2644	14.43	305.81	.004
34500	299	36	233.86	-7.9	5.9644	8.8851	13.57	306.69	.002
34750	307	37	235.19	-7.9	5.7536	8.5227	13.38	307.56	.004
35000	315	38	236.51	-8.3	5.5516	8.1776	14.84	308.42	.008
35250	325	39	237.76	-8.5	5.3580	7.8442	15.46	309.37	.008
35500	334	40	239.50	-8.6	5.1719	7.5231	15.57	310.36	.008
35750	340	40	241.55	-8.6	4.9942	7.2030	15.21	311.69	.008
36000	351	41	243.75	-8.7	4.8231	6.8933	14.69	313.11	.008
36250	354	41	245.48	-8.6	4.6603	6.6137	16.45	314.22	.004
36500	355	42	247.19	-8.6	4.5031	6.3466	18.32	315.30	.004
36750	357	41	247.56	-8.2	4.3524	6.1250	16.26	315.54	.002
37000	354	41	247.90	-7.9	4.2067	5.9119	14.10	315.76	.002
37250	353	40	249.44	-8.6	4.0669	5.6801	15.26	316.74	.005
37500	352	39	251.13	-9.2	3.9322	5.4550	16.60	317.81	.005
37750	352	38	253.40	-9.5	3.8035	5.2292	18.69	319.24	.006
38000	351	36	255.67	-9.3	3.6791	5.0131	20.78	320.62	.006
38250	352	34	256.65	-9.4	3.5604	4.8330	20.39	321.28	.008
38500	352	33	257.59	-8.2	3.4453	4.6599	19.95	321.82	.008
38750	353	31	257.98	-8.7	3.3347	4.5031	19.62	322.12	.006
39000	354	30	257.91	-8.7	3.2276	4.3598	19.92	322.07	.004
39250	355	29	257.86	-8.8	3.1239	4.2205	20.03	322.04	.005
39500	359	28	257.98	-8.8	3.0236	4.0832	20.11	322.11	.008
39750	363	27	258.09	-9.1	2.9266	3.9503	20.18	322.19	.008
40000	367	27	258.77	-9.5	2.8329	3.8140	20.68	322.61	.007
40250	370	26	259.64	-1.00	2.7424	3.6798	21.32	323.15	.007
40500	373	25	260.63	-1.04	2.6550	3.5490	21.94	323.76	.005
40750	372	25	262.04	-1.06	2.5712	3.4184	22.50	324.64	.003
41000	372	24	263.45	-1.07	2.4900	3.2922	23.06	325.51	.003
41250	370	23	264.53	-1.05	2.4118	3.1763	23.17	326.18	.006
41500	362	21	265.29	-1.01	2.3365	3.0682	22.86	326.65	.009
41750	362	19	266.06	-9.6	2.2635	2.9639	22.56	327.12	.009
42000	352	17	265.83	-9.5	2.1929	2.8739	22.54	326.98	.016
42250	338	15	265.31	-9.5	2.1245	2.7897	22.61	326.66	.017
42500	322	14	264.80	-9.5	2.0583	2.7028	22.75	326.35	.012
42750	310	15	264.53	-1.02	1.9938	2.6258	24.02	326.18	.012
43000	199	16	264.26	-1.08	1.9314	2.5462	25.29	326.01	.012
43250	191	18	264.08	-1.14	1.8710	2.4682	26.44	325.90	.012
43500	188	19	264.59	-1.17	1.8125	2.3865	26.64	326.21	.008
43750	185	21	265.09	-1.21	1.7559	2.3075	26.85	326.52	.008
44000	183	23	265.60	-1.24	1.7010	2.2312	27.06	326.84	.008
44250	183	25	266.30	-1.24	1.6482	2.1562	27.40	327.27	.007
44500	183	26	267.03	-1.23	1.5971	2.0837	27.77	327.72	.007
44750	183	28	267.76	-1.23	1.5476	2.0136	28.13	328.16	.007
45000	183	29	268.07	-1.25	1.4997	1.9490	28.79	328.36	.003
45250	184	29	268.09	-1.29	1.4535	1.8868	29.66	328.36	.001
45500	185	29	268.10	-1.33	1.4086	1.8304	30.54	328.37	.001
45750	185	29	268.11	-1.37	1.3651	1.7738	31.41	328.38	.001
46000	185	29	268.92	-1.41	1.3233	1.7142	31.89	328.88	.002
46250	185	28	269.74	-1.44	1.2827	1.6567	32.37	329.37	.002
46500	185	28	270.55	-1.48	1.2433	1.6010	32.85	329.87	.002

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ROCS 3

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46750	185	27	271.35	-1.51	1.2053	1.5474	33.36	330.36	.002
47000	185	27	272.06	-1.49	1.1687	1.4966	34.10	330.79	.002
47250	184	26	272.78	-1.48	1.1333	1.4474	34.85	331.22	.002
47500	184	26	273.49	-1.46	1.0989	1.3998	35.59	331.66	.002
47750	184	25	274.21	-1.45	1.0656	1.3538	36.33	332.09	.002
48000	182	25	273.31	-1.45	1.0332	1.3170	36.56	331.55	.003
48250	180	25	272.31	-1.46	1.0018	1.2817	36.75	330.94	.003
48500	179	24	271.31	-1.47	.9714	1.2473	36.94	330.33	.003
48750	177	24	270.32	-1.48	.9419	1.2139	37.13	329.73	.003
49000	174	24	269.49	-1.54	.9131	1.1795	37.86	329.35	.004
49250	171	24	269.41	-1.65	.8831	1.1445	39.07	329.18	.005
49500	169	25	269.13	-1.77	.8579	1.1105	40.27	329.00	.005
49750	166	25	268.85	-1.88	.8316	1.0775	41.48	328.83	.005
50000	163	26	268.58	-1.99	.8060	1.0455	42.69	328.66	.005
50250	162	26	268.89	-2.05	.7813	1.0123	43.46	328.85	.002
50500	162	26	269.44	-2.08	.7574	.9793	44.06	329.12	.001
50750	161	26	270.00	-2.12	.7343	.9474	44.65	329.53	.001
51000	160	26	270.55	-2.15	.7118	.9166	45.25	329.87	.001
51250	160	26	271.11	-2.19	.6900	.8867	45.84	330.21	.001
51500	160	26	271.44	-2.21	.6682	.8585	46.39	330.41	.004
51750	161	26	271.37	-2.23	.6486	.8326	46.85	330.37	.002
52000	162	26	271.30	-2.24	.6288	.8025	47.32	330.33	.002
52250	163	26	271.23	-2.25	.6097	.7831	47.78	330.28	.002
52500	164	26	271.16	-2.27	.5911	.7595	48.24	330.24	.002
52750	166	26	271.09	-2.28	.5731	.7366	48.70	330.20	.002
53000	167	26	270.95	-2.33	.5557	.7145	49.14	330.11	.002
53250	167	26	270.76	-2.41	.5387	.6931	50.83	330.00	.002
53500	168	26	270.58	-2.48	.5223	.6725	52.03	329.82	.002
53750	169	26	270.40	-2.56	.5063	.6524	53.22	329.78	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.66	.002
54250	170	27	270.03	-2.71	.4759	.6140	55.61	329.55	.002
54500	171	26	269.77	-2.77	.4614	.5958	56.62	329.39	.003
54750	174	25	269.35	-2.80	.4472	.5784	57.26	329.14	.007
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.007
55250	180	22	268.52	-2.87	.4201	.5451	58.54	328.63	.007
55500	183	21	268.11	-2.90	.4072	.5292	59.18	328.38	.007
55750	187	20	267.69	-2.94	.3947	.5137	59.82	328.12	.007
56000	191	19	267.28	-2.97	.3826	.4987	60.46	327.87	.007
56250	196	18	266.65	-3.03	.3708	.4844	61.22	327.48	.007
56500	201	17	265.50	-3.16	.3591	.4712	62.29	326.77	.008
56750	207	16	264.35	-3.28	.3478	.4584	63.35	326.07	.008
57000	214	15	263.20	-3.41	.3369	.4460	64.42	325.36	.008
57250	221	14	262.05	-3.53	.3264	.4339	65.49	324.65	.008
57500	227	14	260.90	-3.66	.3161	.4221	66.55	323.93	.008
57750	237	14	259.75	-3.78	.3062	.4107	67.62	323.22	.008
58000	245	14	258.60	-3.91	.2966	.3995	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

MAXIMUM ALTITUDE 61559

TEST NUMBER 0000
CAPE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

SUPER LUKI FWN-100

ALT GROUP	DIR IN	SFO KTS	TEMP K	TEMP CORN	PRESS MM	DENSITY G/M3	RF KTS	VS KTS	SHR /SEC
65000	225	27	203.03	-46	54.1962	92.9260	14.42	555.10	.999
67000	239	23	205.17	-46	51.5245	87.4883	20.61	558.02	.012
68000	246	19	205.73	-44	49.0046	82.5830	11.28	550.14	.007
69000	255	28	206.68	-44	46.6190	78.5813	16.91	560.07	.015
70000	238	37	208.44	-45	44.3550	74.1346	8.35	562.45	.016
71000	247	36	210.63	-46	42.2184	70.0286	12.85	564.59	.009
72000	248	33	211.29	-46	40.2032	66.2887	25.67	566.28	.005
73000	253	32	211.40	-46	38.2878	63.0961	19.69	566.43	.005
74000	263	35	212.16	-46	36.4660	59.8804	13.41	567.44	.011
75000	273	33	212.96	-45	34.7381	56.8271	10.74	568.52	.010
76000	266	31	213.52	-48	33.0963	53.9593	20.60	569.27	.007
77000	254	35	214.92	-47	31.5406	51.1254	16.81	571.13	.013
78000	253	32	215.52	-47	30.0649	48.5598	16.28	571.92	.002
79000	261	40	216.70	-48	28.6637	46.0815	18.60	573.49	.010
80000	265	41	217.23	-48	27.3334	43.8364	19.73	574.18	.004
81000	259	42	217.18	-48	26.0661	41.8120	18.72	574.13	.007
82000	253	45	217.90	-50	24.8587	39.7446	12.79	575.07	.010
83000	253	47	218.91	-52	23.7130	37.7380	26.08	576.40	.004
84000	255	49	219.87	-52	22.6240	35.8254	29.56	577.44	.004
85000	257	50	219.89	-49	21.5875	34.2022	13.55	577.69	.003
86000	254	51	220.98	-53	20.6005	32.4768	23.21	579.13	.004
87000	252	51	221.97	-53	19.6643	30.8699	26.08	580.35	.003
88000	251	52	222.10	-51	18.7724	29.4464	23.19	580.58	.002
89000	251	54	221.89	-52	17.9710	28.1366	20.04	580.32	.004
90000	252	58	221.62	-53	17.1074	26.8922	22.12	579.96	.006
91000	253	61	222.87	-56	16.3324	25.5302	25.73	581.59	.005
92000	252	62	224.82	-57	15.5982	24.1654	28.28	584.20	.003
93000	254	62	225.88	-56	14.9014	22.9826	22.90	585.51	.003
94000	255	62	226.41	-60	14.2379	21.9072	41.59	586.20	.002
95000	258	63	226.38	-54	13.6048	20.9369	19.31	586.15	.005
96000	261	64	226.45	-58	12.9999	19.9994	28.76	586.25	.010
97000	262	64	227.16	-60	12.4230	19.0525	32.33	587.16	.002
98000	259	63	228.38	-61	11.8739	18.1130	35.34	588.74	.006
99000	253	63	228.56	-58	11.3508	17.3017	28.36	588.97	.010
100000	248	64	227.20	-57	10.8495	16.6360	31.37	587.22	.010
101000	245	67	225.28	-56	10.3670	16.0317	27.82	584.73	.007
102000	245	67	223.92	-63	9.9027	15.4032	39.28	583.02	.001
103000	248	66	223.19	-64	9.4572	14.7616	38.90	582.02	.005
104000	249	66	222.61	-62	9.0306	14.1325	30.28	581.26	.002
105000	247	66	222.31	-65	8.6225	13.5125	24.99	580.86	.003
106000	245	67	224.00	-74	8.2340	12.8059	37.54	583.07	.005
107000	242	67	226.27	-76	7.8668	12.1120	47.11	586.02	.006
108000	239	68	228.00	-74	7.5181	11.4873	45.02	588.25	.005
109000	237	69	228.83	-70	7.1870	10.9416	32.17	589.33	.005
110000	236	71	229.67	-72	6.8717	10.4236	40.83	590.40	.004
111000	236	69	230.35	-72	6.5713	9.9385	37.72	591.27	.003
112000	238	70	231.91	-78	6.2856	9.4425	44.38	593.27	.004
113000	239	71	233.55	-79	6.0141	8.9709	45.24	595.37	.003
114000	240	72	235.17	-79	5.7559	8.5266	43.83	597.43	.003
115000	243	74	236.78	-83	5.5104	8.1076	49.48	599.47	.008
116000	246	76	238.62	-85	5.2776	7.7052	50.88	601.79	.008
117000	249	78	240.77	-86	5.0560	7.3158	50.49	604.50	.008
118000	253	79	243.46	-87	4.8457	6.9340	48.43	607.87	.008

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119000	254	80	245.63	-1.85	4.6467	6.5905	54.48	610.57	.004
120000	255	81	247.33	-1.85	4.4566	6.2774	58.39	612.68	.002
121000	256	80	247.72	-1.91	4.2755	6.0127	49.55	613.17	.002
122000	257	79	249.04	-1.84	4.1074	5.7408	49.08	614.79	.004
123000	252	76	251.04	-1.92	3.9372	5.4638	54.20	617.35	.005
124000	252	77	253.81	-1.86	3.7807	5.1893	62.55	620.65	.006
125000	251	68	256.08	-1.97	3.6311	4.9399	67.75	623.42	.007
126000	252	64	257.23	-1.91	3.4888	4.7250	66.01	624.82	.008
127000	253	60	257.99	-1.87	3.3523	4.5267	64.95	625.75	.007
128000	254	58	257.90	-1.87	3.2215	4.3516	63.39	625.64	.004
129000	257	56	257.89	-1.88	3.0958	4.1820	65.78	625.63	.006
130000	261	54	258.03	-1.90	2.9750	4.0167	66.09	625.80	.008
131000	266	52	258.52	-1.94	2.8592	3.8530	67.26	626.39	.008
132000	270	51	259.58	-1.00	2.7482	3.6884	69.82	627.67	.007
133000	273	49	260.85	-1.04	2.6419	3.5285	72.28	629.20	.005
134000	272	48	262.52	-1.06	2.5406	3.3709	74.50	631.27	.003
135000	272	46	264.22	-1.07	2.4432	3.2214	76.42	633.25	.003
136000	262	41	265.15	-1.01	2.3505	3.0883	75.19	634.37	.009
137000	262	37	266.08	-1.96	2.2613	2.9607	73.97	635.48	.009
138000	249	32	265.70	-1.93	2.1736	2.8526	74.01	635.03	.016
139000	230	28	265.06	-1.95	2.0932	2.7511	74.30	634.26	.017
140000	213	22	264.62	-1.00	2.0137	2.6511	72.51	633.73	.014
141000	200	31	264.29	-1.07	1.9371	2.5535	82.58	633.33	.012
142000	190	35	264.15	-1.14	1.8635	2.4577	86.82	633.16	.011
143000	187	39	264.76	-1.19	1.7927	2.3589	87.65	633.90	.008
144000	184	43	265.38	-1.23	1.7246	2.2641	88.48	634.64	.008
145000	183	47	266.15	-1.24	1.6595	2.1722	89.65	635.56	.007
146000	183	51	267.03	-1.23	1.5969	2.0834	91.10	636.62	.007
147000	183	56	267.92	-1.23	1.5368	1.9983	92.55	637.67	.007
148000	184	57	268.08	-1.27	1.4791	1.9222	95.22	637.86	.002
149000	184	57	268.09	-1.32	1.4236	1.8500	99.22	637.88	.001
150000	185	57	268.11	-1.36	1.3703	1.7805	102.72	637.90	.001
151000	185	56	269.01	-1.41	1.3192	1.7084	104.79	638.96	.002
152000	185	55	270.00	-1.45	1.2700	1.6387	106.70	640.14	.002
153000	185	54	270.98	-1.50	1.2227	1.5719	108.62	641.31	.002
154000	185	52	271.82	-1.50	1.1725	1.5082	111.22	642.38	.002
155000	184	51	272.76	-1.48	1.1341	1.4485	114.27	643.41	.002
156000	184	50	273.63	-1.44	1.0923	1.3907	117.24	644.43	.002
157000	183	49	273.90	-1.45	1.0521	1.3381	119.57	644.74	.002
158000	181	48	272.68	-1.46	1.0132	1.2845	120.34	643.31	.003
159000	179	47	271.46	-1.47	.9758	1.2523	121.11	641.87	.003
160000	177	46	270.24	-1.48	.9398	1.2115	121.87	640.43	.003
161000	173	47	269.61	-1.57	.9048	1.1692	125.36	639.68	.004
162000	170	48	269.27	-1.71	.8711	1.1270	130.19	639.28	.005
163000	167	49	268.93	-1.85	.8386	1.0863	135.02	638.87	.005
164000	163	50	268.59	-1.92	.8073	1.0471	139.86	638.47	.005
165000	162	51	268.98	-2.06	.7773	1.0067	142.93	638.93	.002
166000	161	51	269.66	-2.10	.7484	.9668	145.31	639.74	.001
167000	160	51	270.34	-2.14	.7205	.9286	147.69	640.54	.001
168000	160	51	271.01	-2.18	.6938	.8918	150.07	641.34	.001
169000	160	51	271.44	-2.21	.6680	.8574	152.27	641.85	.000
170000	161	50	271.34	-2.23	.6433	.8259	154.12	641.75	.002
171000	163	50	271.27	-2.25	.6195	.7956	155.97	641.64	.002
172000	164	50	271.18	-2.26	.5966	.7664	157.82	641.54	.002
173000	166	50	271.10	-2.28	.5745	.7383	159.67	641.44	.002
174000	167	50	270.92	-2.34	.5532	.7114	163.41	641.23	.002

MAXIMUM ALTITUDE 201965

175000	168	50	270.70	-2.44	.5327	.6856	168.18	640.97	.002
176000	169	51	270.47	-2.54	.5130	.6607	172.96	640.70	.002
177000	169	51	270.25	-2.62	.4940	.6368	177.74	640.44	.002
178000	170	52	270.03	-2.71	.4757	.6137	182.51	640.17	.002
179000	172	51	269.67	-2.78	.4580	.5916	186.26	639.75	.003
180000	175	47	269.17	-2.82	.4409	.5706	188.82	639.15	.007
181000	179	44	268.66	-2.86	.4244	.5503	191.37	638.55	.007
182000	183	41	268.15	-2.90	.4086	.5308	193.93	637.95	.007
183000	187	38	267.64	-2.94	.3933	.5120	196.49	637.34	.007
184000	191	34	267.14	-2.98	.3786	.4938	199.05	636.74	.007
185000	199	33	266.01	-3.10	.3643	.4771	202.78	635.40	.008
186000	205	31	264.61	-3.25	.3504	.4613	207.05	633.72	.008
187000	213	29	263.21	-3.41	.3370	.4461	211.32	632.04	.008
188000	222	27	261.81	-3.56	.3242	.4314	215.58	630.36	.008
189000	232	27	260.41	-3.71	.3118	.4171	219.85	628.67	.008
190000	242	27	259.01	-3.86	.2999	.4034	224.11	626.97	.008
190714	249	27	258.01	-3.97	.2917	.3939	227.16	625.76	.008

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ATTACHMENT 5
INTERMEDIATE SCRATCH FILE, DUMP AND BINARY

PASS 1

B-109

INTERMEDIATE FILE: ROCKET-SOURCE PROGRAM

RELUM HRS	COMPONENT	Δ	UN CORRECTED	COMPONENT	Δ	TEMP- DEGREES C	UN-CORR TEMP DEGREES C	PRESSURE FALL RATE MPS
19197.42	-10.91	3.27	-16.35	-8.07	197.1	197.1	999.900	-0.04
19209.82	-6.94	-7.33	-16.98	-8.99	197.3	197.3	999.900	-0.79
19296.25	-5.07	-2.62	-15.13	-3.50	197.7	197.7	999.900	-4.97
19463.02	-6.02	-13.58	-12.45	-3.11	197.5	197.5	999.900	-6.02
19610.36	-9.78	-2.29	-10.87	3.29	197.4	197.4	999.900	-3.93
19694.32	-7.53	-2.62	-6.94	-1.14	199.2	199.2	999.900	-1.66
19734.26	-6.88	-5.02	-5.07	-2.64	201.5	201.5	999.900	-1.00
19821.23	-7.50	-7.21	-13.66	-6.11	202.4	202.4	999.900	-4.83
20000.00	-8.87	-9.19	-9.79	-12.39	202.2	202.2	1.742	-7.24
20002.80	-8.82	-9.19	-9.79	-12.39	202.2	202.2	1.742	-7.24
20160.87	-10.32	-10.09	-12.12	-5.62	203.8	203.8	1.731	-3.30
20258.64	-10.99	-9.01	-11.60	-6.91	204.4	204.4	1.724	-3.22
20403.30	-10.39	-6.30	-10.46	-7.66	205.1	205.1	1.713	-6.43
20575.81	-9.06	-5.03	-8.23	-9.50	205.9	206.3	1.701	-5.08
20894.45	-8.05	-5.22	-8.03	-2.09	206.6	207.0	1.693	-2.83
20812.98	-8.33	-5.94	-7.64	-3.30	207.1	207.5	1.684	-5.02
20905.71	-9.77	-6.64	-9.20	-5.81	206.9	207.3	1.677	-1.11
20992.60	-11.53	-7.78	-11.43	-10.61	206.6	207.0	1.671	-5.14
21154.67	-13.20	-10.14	-14.67	-12.39	207.1	207.5	1.660	-5.19
21267.32	-14.93	-10.66	-15.62	-7.92	207.9	208.4	1.652	-2.32
21340.62	-16.37	-9.97	-14.76	-9.82	208.9	208.9	1.647	-2.56
21481.42	-17.19	-8.55	-14.64	-10.18	208.9	209.4	1.632	-4.94
21645.24	-16.91	-7.26	-18.12	-6.82	210.1	210.5	1.625	-3.83
21762.42	-16.18	-6.97	-17.86	-6.06	211.4	211.8	1.612	-3.98
21942.35	-15.74	-6.28	-15.46	-5.81	211.3	211.7	1.604	-8.02
22071.20	-15.51	-5.37	-13.14	-5.22	211.3	211.8	1.594	-5.58
22166.02	-15.52	-5.23	-14.37	-6.69	211.4	211.8	1.589	-5.75
22346.61	-16.08	-4.44	-12.72	-4.58	211.4	211.9	1.574	-6.29
22479.30	-17.15	-3.05	-18.62	-1.58	211.9	212.4	1.567	-2.55
22582.21	-17.98	-1.62	-17.01	-3.06	212.3	212.7	1.560	-4.78
22741.99	-17.77	.43	-17.30	.34	212.7	213.1	1.549	-5.41
22869.64	-16.66	.94	-17.52	1.51	213.0	213.4	1.540	-3.10
23000.34	-15.81	.19	-16.50	.74	212.9	213.4	1.531	-5.61
23172.65	-15.97	-1.25	-15.16	1.23	213.6	214.1	1.519	-6.34
23345.01	-16.45	-3.23	-14.79	-5.13	214.4	214.9	1.507	-4.68
23493.35	-17.38	-5.18	-17.31	-6.61	215.0	215.5	1.497	-5.21
23673.91	-18.71	-5.69	-20.41	-6.48	215.4	215.9	1.485	-6.83
23834.14	-19.61	-5.89	-20.08	-4.28	215.6	216.0	1.474	-3.85
23981.30	-20.44	-3.94	-20.25	-5.20	216.4	216.9	1.464	-5.96
24152.46	-20.54	-2.50	-20.14	-1.32	216.9	217.4	1.452	-5.45
24311.77	-20.80	-1.68	-19.57	-3.57	217.2	217.7	1.442	-5.17
24499.23	-20.89	-2.53	-22.32	.70	217.3	217.7	1.429	-7.36
24694.94	-21.08	-4.04	-21.22	-3.63	217.2	217.7	1.416	-5.65
24870.14	-21.58	-5.61	-22.20	-5.90	217.3	217.8	1.404	-6.03
25013.83	-22.30	-6.88	-20.12	-9.99	218.0	218.5	1.394	-3.55
25181.83	-22.75	-7.54	-23.19	-7.72	218.6	219.2	1.383	-7.65
25420.55	-23.73	-6.92	-24.52	-4.94	219.2	219.7	1.367	-8.26
25684.62	-24.57	-6.28	-24.96	-7.06	219.9	220.4	1.349	-9.34
25881.54	-24.92	-5.82	-24.64	-4.05	219.9	220.4	1.336	-3.79
26022.61	-25.11	-6.29	-25.31	-7.33	219.9	220.4	1.327	-5.62

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INTERMEDIATE SCRATCH FILE

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26213.01	-25.18	-7.14	-24.95	-7.40	221.0	221.5	1.314	7.08
26403.10	-25.12	-7.65	-23.97	-7.85	221.9	222.4	1.301	-6.64
26687.03	-25.20	-8.38	-27.46	-7.80	222.0	222.5	1.285	-10.57
26921.03	-25.44	-8.75	-24.72	-9.07	222.1	222.6	1.269	-5.76
27067.43	-26.11	-9.21	-25.21	-8.97	222.0	222.5	1.257	-6.06
27251.50	-27.29	-8.51	-27.04	-8.86	221.7	222.2	1.245	-6.21
27446.67	-28.40	-9.01	-28.58	-10.22	221.6	222.1	1.232	-6.80
27667.77	-29.63	-8.84	-30.00	-7.71	222.3	222.9	1.218	-7.94
27901.09	-30.48	-9.75	-31.54	-6.42	224.2	224.7	1.202	-7.62
28152.03	-30.43	-9.58	-30.72	-13.50	223.5	224.0	1.186	-9.44
28394.07	-30.77	-8.71	-29.13	-8.03	226.0	226.5	1.170	-6.36
28626.21	-30.83	-8.21	-31.47	-10.80	226.5	227.1	1.151	-13.78
28980.21	-31.54	-6.64	-30.32	-3.33	226.4	226.9	1.132	-5.15
29188.75	-32.56	-4.01	-33.86	-4.47	226.4	227.0	1.118	-8.75
29452.15	-32.78	-4.15	-32.03	-5.54	226.6	227.2	1.102	-8.81
29738.82	-33.37	-5.42	-34.32	-1.21	228.1	228.7	1.082	-11.43
30071.64	-31.32	-8.24	-31.34	-6.18	228.9	229.5	1.062	-9.22
30326.90	-30.41	-11.18	-28.85	-13.58	228.0	228.5	1.045	-7.80
30609.70	-30.43	-13.42	-30.36	-15.26	226.5	227.1	1.027	-11.06
30881.46	-31.45	-15.18	-29.03	-13.86	224.6	225.1	1.009	-7.06
31209.28	-30.95	-13.78	-33.87	-16.45	223.6	224.3	.988	-14.79
31562.72	-31.80	-11.81	-33.03	-11.32	222.8	223.4	.964	-9.11
31844.86	-31.54	-13.01	-33.11	-11.43	222.4	223.0	.946	-9.37
32086.10	-31.38	-13.44	-24.13	-8.36	222.3	222.9	.930	-6.72
32381.59	-30.91	-15.03	-36.02	-18.14	224.6	225.3	.911	-12.98
32807.02	-30.14	-17.35	-23.02	-23.57	227.7	228.5	.883	-15.52
33183.34	-29.81	-19.07	-31.29	-13.24	228.7	229.4	.859	-9.44
33512.30	-30.22	-20.42	-30.33	-23.98	229.6	230.3	.838	-12.42
33870.42	-29.42	-19.77	-26.44	-19.47	230.4	231.2	.815	-11.38
34258.64	-30.86	-18.87	-31.52	-20.22	232.6	233.4	.791	-14.50
34669.76	-31.48	-18.52	-32.85	-19.56	234.8	235.5	.765	-12.91
35094.22	-34.34	-16.87	-34.94	-16.48	237.0	237.8	.739	-15.39
35559.08	-37.24	-14.87	-35.29	-12.74	239.9	240.7	.710	-15.60
36013.02	-38.91	-11.60	-37.42	-12.56	243.9	244.7	.683	-14.66
36508.89	-40.28	-10.50	-44.40	-13.87	247.2	248.1	.653	-18.39
36926.01	-39.65	-11.24	-38.97	-5.36	247.9	248.7	.624	-14.08
37449.98	-37.54	-11.93	-38.26	-9.18	250.7	251.6	.598	-16.18
38004.94	-34.06	-11.52	-34.17	-16.97	255.7	256.7	.565	-20.82
38613.53	-29.94	-9.47	-27.66	-13.01	258.0	258.9	.531	-19.76
39210.11	-28.07	-7.57	-26.93	-5.80	257.8	258.7	.497	-20.02
39813.40	-26.95	-2.64	-26.06	-1.44	258.1	259.0	.463	-20.20
40443.74	-25.59	1.26	-25.44	3.06	260.3	261.4	.427	-21.82
41120.89	-23.63	.85	-25.76	-.01	264.1	265.2	.389	-23.32
41808.04	-18.61	-2.88	-20.61	-.49	266.2	267.2	.352	-22.49
42485.51	-9.75	-10.70	-9.98	-11.31	264.8	265.8	.314	-22.68
43221.82	-3.34	-12.16	-3.90	-19.18	264.0	265.2	.274	-26.41
44024.24	-1.09	-22.86	6.17	-25.54	265.6	266.9	.229	-27.08
44834.61	-1.59	-29.06	7.68	-32.83	268.1	269.3	.184	-28.28
45750.02	-2.69	-28.99	-12.94	-21.56	268.1	269.5	.135	-31.41
46220.22	-2.53	-27.51	-11.50	-31.96	271.3	272.8	.083	-33.27
47765.03	-1.57	-25.40	1.08	-30.22	274.3	275.7	.027	-36.38
48669.02	1.70	-23.60	8.65	-14.06	269.8	271.3	-.632	-37.22
50073.09	7.77	-24.86	9.49	-24.35	268.5	270.5	-.098	-43.04
51417.18	9.53	-24.48	5.61	-26.02	271.5	273.7	-.170	-46.23
52838.63	6.09	-24.79	5.89	-24.75	271.1	273.4	-.246	-48.87
54417.78	4.53	-26.48	3.19	-25.61	269.9	272.7	-.331	-56.41

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58177.57	-4.53	-17.64	-6.29	-15.57	267.0	270.0	-1.427	60.91
58178.40	-16.15	-35.04	-14.15	-5.25	268.0	262.0	-1.535	-69.24

B-113

16	161	121	4134	3431	1210	5999	4444	1058UJ.R
18	435	3415	415	3415	435	753	8590	8888	BE+BE+D+G+...
20	444B	6903	4461	4177	1020	4104	1216	4843	IN+BAOL+U+U+...
22	119F	1199	4105	4900	4305	4900	433E	767	A+BEI+BEI+U+G
24	1064	8334	4448	6641	1151	2700	1179	1100	AJ3UN+ZADINA+AI
26	112	222	1157	1055	4205	884E	4105	894E	AR+A7MUBENBEN
28	431	7167	1141	8408	4440	0712	1161	2559	U+GAU+DL+AA+Y
30	1107	514F	1107	200	1131	0200	4305	7911	AYGAG+AIKBEY
32	423	2411	433L	716	1160	4044	4440	942B	BEV+U+GA+LHIL+L
34	119C	7028	1040	7990	1100	EFEE	4134	AE66	A+P+UJ+A+NA4+F
36	4205	6002	433L	6002	1131	7167	1131	FO88	RENRMC+GA+P
38	440C	EE53	1178	3961	1129	F053	116F	0888	GLNSAX+IA+PSAO+.
40	1024	4222	4207	3049	4207	3849	433F	767	B+BBIBBIL+U+G
42	111A	A000	4440	1643	116E	170E	1150	4780	A+U+CAN+AFGO
44	1151	2222	1120	3F77	4209	858E	4202	858E	AO+AR+BL+BI+.
46	413E	7E57	COFF	A322	4440	6088	1178	OCF3	C+GE+D+MAFAX+S
48	1173	6700	1161	1000	1100	9666	420A	6959	AG+ALLAZ+FBJY
50	420A	6959	433E	7E67	1140	5222	444E	2000	8J1YC+GAMR+DN
52	1180	1878	1193	183F	1190	8333	1106	4666	A+L+A+7A+33AFF
54	420A	1000	420A	8419	1118	1115	1173	1111	BJ+U+J4+A+ASQ
56	444E	2700	1180	DB70	1193	183F	1190	8333	UN+LA+L+A+7A+33
58	1106	4666	420A	3020	420A	8419	4118	FO3F	AFFBJ+BJ4+A+Y
60	1123	1111	444E	1000	1145	2888	1161	784F	ASQ+DN+42+1A+7
62	1101	7777	1159	ES00	4208	5617	4208	C9AC	AAWAVE+ERU+KI
64	4118	1145	1134	444E	114E	2263	114E	C485	A+1EAA+U+U+7A+U
66	1190	1008	1169	9999	116E	9F77	420C	6E29	A+...A+...AN+WBLN
68	4201	1066	4118	945E	1133	7F77	444E	834C	BL+FA+...43+U+U+L
70	1106	1682	4200	8871	4118	6908	1166	A2AA	A88+AD0+A+FFA+7
72	4450	5F00	1190	7730	1150	8989	1183	CDDH	BB+...BH+GA+INAFHJ
74	1198	0800	4200	EOOE	420E	5309	4118	8888	DP+PA+W+AP+...A+7
76	1151	36EE	4450	0674	1180	CD62	1153	3733	A+...BM+...BNS+4+73
78	1180	4266	1121	4111	420E	984E	420E	833E	ADGNDP+TA+MeAS+7
80	4118	1489	1120	5500	4451	4CFA	1185	546A	A+...A+U+U+L+A+U
82	420F	848E	117A	3888	1134	8888	420F	1409	A+...KA+...FA48+BU+Y
84	419C	5F15	116A	416E	1193	3888	1150	A987	BO+...A+...AQ+...F+U+7
86	420E	EC91	420F	5703	411A	0703	1111	EB33	A+...AJANA+...FA+K3
88	4452	6736	1188	8588	1170	7203	1184	D555	BNL+80WSA+W+A+U
90	1109	0444	420E	9408	420F	0483	411A	D0DD	DR+...48+BA+...VSA611
92	1152	5000	4452	420C	1103	2651	1142	8BA7	A+TDBN+...BO+...A+7
94	11E4	0444	1106	3200	420F	1045	420F	5107	APP+DR+...ASAQA+UG
96	4116	8L78	1153	1888	4453	135E	11EF	8611	AJDDAF+2+BU+EBU+.
98	1107	9923	11FA	8888	117F	E388	420F	E798	A+...AS+...DS+...ANG
100	4200	5866	411A	6001	1125	1055	4453	E883	A+...A+...FA+CF80H
102	4200	5866	411A	6001	1125	1055	4453	502E	BE+LA+...4442+U+DS+.
104	4200	7806	4200	ER06	411A	588E	1129	12AA	B+...JA+...WAL+...A+7
106	4453	EB08	1211	2F5F	1188	C776	1210	04CC	B+...V+R+...A+X+...A+L
108	1162	1200	4200	ES0B	4201	5E16	411A	4333	ISMRB+...A+...OVB+73
110	116F	4000	4454	803E	1170	E92E	1174	3F55	A+...B+...FENR+...A+7U
112	1212	1E66	1160	1000	4202	0F83	4202	1E2E	AO+LOT+...B+...A+7
114	411A	0000	1130	5088	4455	026C	1210	8589	B+...FAM+...BR+...BR+.
116	116E	7703	1211	0055	1161	0888	4203	2E6A	A+...LA+P+DU+...L+...J
118	4203	0728	4119	0F40	113F	ACCC	4455	4464	40W+...B+...JUAN+...ESND
120	116E	0905	1164	6039	117	5000	1150	8659	BSW+A+...MA+7+L+OU6Y
122	116E	0905	1164	6039	117	5000	1150	E888	A+...IUA+...Y6W+...J+...A+H

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108	4203	441F	4203	8F61	4119	4005	C180	3EEF	BSJ,BS7,A,.,A,.,N
109	4454	3734	C1F8	2160	C155	EC9D	C1D2	3333	D074A,1'AU,.,AR33
110	4554	7888	4203	5248	4203	5248	C1F8	874A	AS,1BSKNBS0,A,.,J
111	4093	3433	4454	9605	C1F8	655F	C154	9D45	(A,330V,.,AXE,46,L
112	C1E5	ELEE	C168	1777	4203	62F9	4203	UBAE	ANNNAK,WSBYESX,
113	4119	4454	C158	1088	4457	449D	4203	1475	ALALP,DMJ,B,.,U
114	C147	1759	C211	6999	C149	7388	4203	68FE	AG,YB,9,AIS,BSK,
115	4203	E349	4119	38D2	C164	B199	4457	CF4C	PSC1A,BKAP1,DMOL
116	C211	26CC	C130	0086	C212	9E66	C119	3055	8,ALA0J,B,.,FA,EU
117	4203	E408	4204	5E33	4119	1311	C128	D3D0	BSJ,B,134,.,A(UJ
118	4458	3035	C211	F84E	C119	F015	C211	0222	DX=8,.,NA,P,B,.,
119	C131	0111	4204	43F1	4204	B9A9	41B8	F3D8	AL,.,B(CoR19)A,SL
120	C14C	6666	4458	05F0	C211	C54E	406E	C320	ALFFDXU,B,ENGNC
121	C211	4055	4057	0000	4204	4816	42D5	1E51	B,MUGM,.,B(C,BU,Q
122	4118	C880	C156	9199	4459	55A5	C210	A908	A,H,AV,.,DYU28,X
123	4081	D380	C211	8444	4118	2806	42D4	ECI2	8850B,.,DA,.,L,B,.,M
124	4205	6FA1	4118	A46E	C131	9911	4459	D658	BUCIA,.,NAI,.,DYXX
125	C1FC	F221	402F	B010	C210	7EEF	408C	7777	A,RIQ/O,B,.,NG(UM
126	4204	E802	4205	653E	4118	7F79	C159	D088	BTKR8UE)A,.,YAYP,
127	4454	8846	C1FF	95C1	C113	F9A7	C1F2	8888	DZ,.,AA,.,AA,V,AR,.,
128	4113	A333	4205	93A8	4206	0FFE	4118	4C08	A,.,38U,.(BU,.,A,LX
129	C165	2192	4458	3103	C210	2380	C133	444C	AGC,D,.,B,.,S,43XL
130	C1EC	AAAA	C152	1999	4206	6896	4206	E551	AL**AR,.,BOK,BVEQ
131	4118	1E52	C144	F111	4458	C55A	C211	6214	A,.,KAJe,DLEZR,.,B
132	C152	E0C7	C211	4EEF	C169	C444	4207	0546	AR'GB,NNATD08W,F
133	4207	7E59	4117	F4B4	C153	4422	445C	79E4	BM,YA,.,TASJ,DVJ
134	C212	B579	C158	125A	C214	6999	C167	A388	B,SYAL,ZB,.,I,AG#J
135	4202	744D	4202	E4A4	4112	C239	C14D	AFEE	BAPHRMJE4,BZAMNN
136	4450	1A25	C213	9031	C15E	44E5	C214	14CC	DJ,ZB,.,IA'DEB,.,L
137	C144	7AAA	4207	8F8E	4208	06E1	4117	9577	AD,.,BM,.,BX,AA,.,M
138	C13D	9AAA	4450	AD4E	C13F	70AC	C13F	05E1	A,.,*DJ-NB,P,PA7,A
139	C214	3F72	C153	300G	4208	4828	42D8	E288	B,7WAS0,BXH(RXB,
140	4117	6C73	C15F	5000	445E	5877	C214	8940	A,LSA,JD,XUB,.,Q
141	C128	0598	C214	224A	C115	F277	42D8	EB51	AL,.,B,.,KA,MMBXKQ
142	4209	6753	4117	3CE6	C157	3444	445E	F7C4	BYGSA,(FAW40D,WD
143	C214	CL58	C11A	D295	C213	9111	C132	14CC	R,LXA,R,.,A,.,A9,L
144	4209	3587	4209	B011	4117	108A	C152	8800	B757BY0,A,.,AR8,
145	445E	B38C	C214	E514	C128	7974	C216	5227	D,3(R,.,E,A(VTB,R"
146	4082	5000	4209	4045	4209	BC08	4116	DCA6	G211BYEEBY(CA,NA
147	C125	C777	4460	76E1	C215	1308	C140	9251	AUGMD,vGB,.,XAG,Q
148	C215	3999	C13A	0666	4209	2E87	4209	A8D9	B,9,A,.,FBY,.,BY(Y
149	4116	A690	C15A	7199	4461	2624	C215	9368	A,.,A2A,DA49R,.,H
150	C159	C808	C216	32AA	C15E	50CC	4209	5468	AYH,B,2*AA^LBY1H
151	4202	D114	4116	7608	C160	4F77	4461	B5D4	BYB,A,.,V,A'oufAST
152	C216	4D79	C16E	0A0E	C214	1E66	C19F	D888	B,MYAN,.,B,.,FA,X,
153	4202	F12A	420A	7D26	4116	4E4E	C138	DACC	BY,.,BZ,.,AA,NN481L
154	4462	500A	C216	8FE0	C178	9655	C217	3088	D8JZB,?,AX,UB,0,
155	C17C	A4CC	420A	432F	4208	2773	4116	1FFE	A,SLRZ4/RL'sA,.,
156	C17A	6444	4463	408C	C217	8870	C16E	8F74	A,.,DDCL,B,.,AN?T
157	4218	B444	C14E	F422	4208	3044	42D8	B5F9	B,.,DAN,.,BLOSBL5Y
158	4115	0E63	C184	3777	4464	549F	C218	9298	A,.,CA,7Wd0T,.,B,.,
159	C144	722E	C218	F555	C121	6088	42D8	ED35	Ann,B,.,uWAg,.,BL,
160	420C	721C	4115	9606	C195	7666	4465	1988	BNA,.,A,.,VFEDE,.,
161	C218	EL17	C15D	0071	C218	62AA	C140	D999	B,.,L,AL,AB,.,*ABY,
162	4208	E24B	420C	50A4	4115	6027	C13C	9666	BCKB\JSA,.,A(C,F
163	4465	A69F	C219	1063	L164	4F8B	C219	5088	DE4,B,.,*An/,B,P,

188	4175	3555	4208	4708	4200	604E	4115	396F	AUSUEUGABNL.A.9.
190	4176	4466	4466	6503	4219	2660	4172	349A	A.A.UFF.B.A.LAR.
192	4177	4466	4466	7000	4200	4200	4200	844E	B.S3AV.#B.781.N
194	4178	4466	4466	7000	4200	4200	4200	344C	A.A.A.A.A.A.A.A.A.A.
196	4179	4466	4466	7000	4200	4200	4200	094C	A.Y.B.V.A.A.A.A.A.
198	4180	4466	4466	7000	4200	4200	4200	1708	R.3VA.QFAZGWH.
200	4181	4466	4466	7000	4200	4200	4200	CC44	B.22A.VB.VFA.LD
202	4182	4466	4466	7000	4200	4200	4200	288H	R.3VA.QFAZGWH.
204	4183	4466	4466	7000	4200	4200	4200	8888	DI.B.A.A.A.A.A.A.A.
206	4184	4466	4466	7000	4200	4200	4200	4102	A.A.A.A.A.A.A.A.A.A.
208	4185	4466	4466	7000	4200	4200	4200	6702	AC2UDIFOB.WA.CK
210	4186	4466	4466	7000	4200	4200	4200	802F	R.4LA.DHJ.A.A.A.
212	4187	4466	4466	7000	4200	4200	4200	4AEB	A.A.A.A.A.A.A.A.A.A.
214	4188	4466	4466	7000	4200	4200	4200	B576	A.A.A.A.A.A.A.A.A.A.
216	4189	4466	4466	7000	4200	4200	4200	36AB	B.A.A.A.A.A.A.A.A.A.
218	4190	4466	4466	7000	4200	4200	4200	740C	B.F.A.A.A.A.A.A.A.A.
220	4191	4466	4466	7000	4200	4200	4200	D199	BI.B.A.A.A.A.A.A.A.
222	4192	4466	4466	7000	4200	4200	4200	FF4E	IL.8R.A.A.A.A.A.A.A.
224	4193	4466	4466	7000	4200	4200	4200	7B4B	A.A.A.A.A.A.A.A.A.A.
226	4194	4466	4466	7000	4200	4200	4200	FOAF	A.A.A.A.A.A.A.A.A.A.
228	4195	4466	4466	7000	4200	4200	4200	B91E	B.A.A.A.A.A.A.A.A.A.
230	4196	4466	4466	7000	4200	4200	4200	6EED	A.A.A.A.A.A.A.A.A.A.
232	4197	4466	4466	7000	4200	4200	4200	747A	A.B.7.A.A.A.A.A.A.
234	4198	4466	4466	7000	4200	4200	4200	EA12	B.A.A.A.A.A.A.A.A.A.
236	4199	4466	4466	7000	4200	4200	4200	7000	B.F.A.A.A.A.A.A.A.A.
238	4200	4466	4466	7000	4200	4200	4200	D199	BA.A.A.A.A.A.A.A.A.
240	4201	4466	4466	7000	4200	4200	4200	7799	DP.7B.A.A.A.A.A.A.
242	4202	4466	4466	7000	4200	4200	4200	6895	A.A.A.A.A.A.A.A.A.A.
244	4203	4466	4466	7000	4200	4200	4200	33E1	A.A.A.A.A.A.A.A.A.A.
246	4204	4466	4466	7000	4200	4200	4200	E54C	K.P.A.A.A.A.A.A.A.A.
248	4205	4466	4466	7000	4200	4200	4200	9058	A.A.A.A.A.A.A.A.A.A.
250	4206	4466	4466	7000	4200	4200	4200	634F	AB.A.A.A.A.A.A.A.A.
252	4207	4466	4466	7000	4200	4200	4200	OC27	B.A.A.A.A.A.A.A.A.A.
254	4208	4466	4466	7000	4200	4200	4200	4222	B.A.A.A.A.A.A.A.A.A.
256	4209	4466	4466	7000	4200	4200	4200	F911	B.A.A.A.A.A.A.A.A.A.
258	4210	4466	4466	7000	4200	4200	4200	525H	DI.A.A.A.A.A.A.A.A.
260	4211	4466	4466	7000	4200	4200	4200	4EE6	A31.B.A.A.A.A.A.A.A.
262	4212	4466	4466	7000	4200	4200	4200	DDC3	A.A.A.A.A.A.A.A.A.A.
264	4213	4466	4466	7000	4200	4200	4200	8866	B.V.A.A.A.A.A.A.A.A.
266	4214	4466	4466	7000	4200	4200	4200	692H	A.A.A.A.A.A.A.A.A.A.
268	4215	4466	4466	7000	4200	4200	4200	FDB1	A2U.B.A.A.A.A.A.A.A.
270	4216	4466	4466	7000	4200	4200	4200	91B7	B.A.A.A.A.A.A.A.A.A.
272	4217	4466	4466	7000	4200	4200	4200	3555	B.A.A.A.A.A.A.A.A.A.
274	4218	4466	4466	7000	4200	4200	4200	EA22	B.A.A.A.A.A.A.A.A.A.
276	4219	4466	4466	7000	4200	4200	4200	Q6D5	D.A.A.A.A.A.A.A.A.A.
278	4220	4466	4466	7000	4200	4200	4200	2667	A.A.A.A.A.A.A.A.A.A.
280	4221	4466	4466	7000	4200	4200	4200	841D	APY.D.A.A.A.A.A.A.A.
282	4222	4466	4466	7000	4200	4200	4200	45E9	B.A.A.A.A.A.A.A.A.A.
284	4223	4466	4466	7000	4200	4200	4200	C088	B.A.A.A.A.A.A.A.A.A.
286	4224	4466	4466	7000	4200	4200	4200	CEAE	A.A.A.A.A.A.A.A.A.A.
288	4225	4466	4466	7000	4200	4200	4200	6408	B.A.A.A.A.A.A.A.A.A.
290	4226	4466	4466	7000	4200	4200	4200	D555	B.A.A.A.A.A.A.A.A.A.
292	4227	4466	4466	7000	4200	4200	4200	DF77	B.A.A.A.A.A.A.A.A.A.
294	4228	4466	4466	7000	4200	4200	4200	2280	IL.U.A.A.A.A.A.A.A.A.
296	4229	4466	4466	7000	4200	4200	4200	2333	A.A.A.A.A.A.A.A.A.A.
298	4230	4466	4466	7000	4200	4200	4200	89CD	AKTOD.A.A.A.A.A.A.A.

[illegible]

708	C218	4E48	C167	F800	C218	F530	4310	F437	B.NNA7x.B.DOC.V7
710	4311	0039	4015	29F4	C221	454C	448A	9508	C..Y6.)TRIFID..
718	C119	311A	C219	6584	4111	4199	C21E	3708	A..I..B.F4A.A.B.7X
720	4311	2405	4311	3824	4F40	4043	C224	4004	C..C..I..7A.C.B.73
728	448E	E513	4118	33A2	C217	9A14	418A	7500	D.E.A..3..B...A.OJ
730	C1E1	0768	4310	1070	4310	F519	MF84	8107	AA..MC..JPC..U..7..16
738	C225	5980	44C3	9718	417C	5877	C218	0036	629..DC...A..LWB..16
740	4192	16EF	C218	5890	4310	C7E6	4310	EB33	A..VNR..X..C..GF.C.H5
748	C018	FCF6	C228	0811	44C8	D42F	4195	4A2A	B...VB...DHT/A..JA
750	C218	242A	4159	0164	C21A	0620	4310	F784	K...RAYNFR...C..W.
758	4311	1ADF	C028	7E07	C22E	3AB8	44CE	66A1	C...B...B...FONF1
760	4161	709E	C218	08F8	415E	44C0	C218	C064	AA..B..H..A'DLR..0p
768	4310	F113	4311	159D	C03F	1A0A	C230	00F7	C..C...E?...B0Jw
770	4304	91C7	4145	5RE1	C21A	7434	4133	04CC	111..BAFLAR..4A3..L
778	C219	9012	4310	DE85	4311	0AB2	C054	0C0F	B...C...C...201N
780	C218	68C0	4408	7193	C148	84C0	4211	42F1	184HDLA..AH..AR...a
788	C164	AAAA	C1F9	1FAA	4310	AF81	4310	DF97	AD**AV..*C../1C...-
790	C06D	4901	C21C	E911	44E3	11CE	C1D2	6BF5	0A1..R..I..DC..NAKKU
798	C150	8097	C1E2	6AAA	C153	F6F7	4310	2018	AP...ABJASVWC..
740	4310	SFB0	C088	F9F0	C245	3D08	----	----	C...08..vpBE=.....

ROCS 3

ATTACHMENT 6
PROGRAM LISTING

PASS 1

B-119

NOTES ON THE CONTRIBUTORS OF VOLUME 100

24

NOTES

INTERFER BUFFER (556) , KFLUOR (33)

SCHLIMMER • HINDENBURG • LOHNMEYER

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535
MAY 11 1964
MAY 11 1964
MAY 11 1964

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

TIME, PREVIOUS TIME, ROLL OVER, TIME, PREVIOUS

19N1080-38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867

(03840).5#0.0.57.9578.1.2.3.67.442.637199.315.

10. 2007

```
Q, 9, 17  
QUALIFIER(SA), BUFFER(1'), (STEMP, BUFFER(14)), (SPRFS, BUFFER(16)).
```

(111) 09033 • GONGJIAN • ((2110))
 (111) 09034 • GONGJIAN • ((2110))

(1) THE RECORDS OF (SLANT RANGE) RECORD (LIT).
(2) THE RECORDS OF (ELEVATION) RECORD (9). (TEMP) RECORD (20).

(52) JEE • YAPHJ • ((Y2)JEH)JEE • 2HEAJ
((52)JEE • YAPHJ) • ((Y2)JEH)JEE • 2HEAJ

STYLING AND THE INTERMEDIATE SIZE GIRL

— १२५६ —

1933.

COMPLETE "KUCNE SOUT"

INITIALIZE THE RAW DATA INPUT FILE

(955)(55) 3333

PAUSE "HUNT DATA DISK ON DRIVE 1"

(1) 1971

...JUFEN IQU2, "TAFE2", LEN=20

OF AGT. & JLT. STUSSMAN, TROT NEAD

READ THE TEMPERATURE CORRECTION COEFFICIENTS

OPEN 3, "BUCKLE UP! F.P.M." ACT="1". EN=208, ERR=10

```

FF0A(3)FBR=110.FEND=10(CRC(I).CIC(I).DIC(I).I=1.5)
NEARBYLOC=2.PB=PHITE I;LEN=208.FERK=110

```

[illegible]

NEAL 1154 3

THE OPERATOR IF THIS WAS A NIGHT LAUNCH

1111 (1994)

```

WRITE(100,00)
XEQO(11,201,FRR=2,END=2) INFLU

```

35194 = JPLIN

OFFICE OF THE ATTORNEY GENERAL
STATE OF NEW YORK
ALBANY, N. Y. 12242-1500
TELEPHONE: (518) 474-6200
FACSIMILE: (518) 474-6200
WWW.STATE.NY.US/AGENCY/AG/

IF (INVERTED, 12, 7) INVERT, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828,

45A THE OPERATOR FOR THE DEVICE

44077E (10,004)

```

ERR=1,201,ERR=4,ENO=4) INFUR

```

OL = 5000 (N), BE = 10000

```
IF (INPU, EQ, "FR") OPEN IQU, "QTY:2", AII="PL", LEN=22
```

THE UNIVERSITY OF CHICAGO PRESS

13:53:16 29 MAR; 1984 ROCKET REGUCTION PASS #1 ... MAIN ROUTINE

354

4.

ROCS 3

```

C     ASK THE OPERATOR FOR THE STATION NUMBER
C
C     WRITE (1,6),205)
C     READ (11,206,END=5,ERR=5) STATIONUM
C     IF (STATIONUM(1:1) GOTO 5
C
C     ASK OPERATOR FOR FIRST GOOD TIME
C
C     WRITE (1,6),207)
C     READ (11,207,END=6,ERR=6) STIME
C
C     READ THE STATION NAME FROM THE STATION NAME FILE
C     IF THE STATION IS UNLISTED, ASK THE OPERATOR FOR THE STATION NAME
C
C     IF (STATIONUM(81:97) GOTO 9
C     OPEN A STATIONIDUS.FM,ATT='L',LEN=30
C     DO 8 I=1,STATIONUM+1
C     READ (4,209) (STATIONID(J),J=1,15)
C     CONTINUE
C     CLOSE 4
C     GOTO 10
C     WRITE (1,6),210)
C     READ (11,209,END=9,ERR=9) (STATIONID(I),I=1,15)
C
C     READ THE HEADER BLOCK AND GET THE RUNTIME AND SIZE INFORMATION
C
C
C     IF N=0
C     CALL KDBLATIONID(I,K,BUFFER(1:IER))
C     IF (IER.NE.1) GOTO 100
C     NAME=BUFFER(153)
C     IHR=BUFFER(149)
C     IMIN=BUFFER(150)
C     ISEC=BUFFER(151)
C     I=IHR/16
C     I2=IHR-I*16
C     I3=IMIN/10
C     I4=IMIN-I3*10
C     ENCODE (ROUTINE,I,I1,I2,I3,I4
C     ZAT=SALT*,3048
C
C     GET THE TEST NUMBER AND THE DATE, AND CONVERT THE START
C     TIME TO SECONDS SINCE MIDNIGHT
C
C     DO 13 I=1,5
C     IOTYPE(I)=BUFFER(I)
C     CONTINUE
C     IDAY=FLD(BUFFER(148),1,5)
C     IMON=FLD(BUFFER(148),6,9)
C     MONTH=INTAB(IMON)
C     IYR=FLD(BUFFER(148),10,16),1900
C     PTIM=FLD(IHR)*3600.0+FLD(IMIN)*60.0+FLD(ISEC)
C     SONDE=
C     ISONDE=10
C     SONDETYPE=BUFFER(6)
C     IF (SONDETYPE.EQ.102) SONDE='A'
C     IF (SONDETYPE.EQ.103) SONDE='C'

```

ROCS 3

B-122

ROCS 3

```

IF (TEMP3,1,1,999,0) (CI=(CI+1
GOTO (40,41,42,43,44,45,46,47),JCT

```

```

40 TMP=TEMP3
GOTO 19

```

```

41 TMP=TEMP3
GOTO 19

```

```

42 TMP=TEMP2
GOTO 19

```

```

43 TMP=(TEMP2+TEMP3)/2.0
GOTO 19

```

```

44 TMP=TEMP1
GOTO 19

```

```

45 TMP=(TEMP1+TEMP3)/2.0
GOTO 19

```

```

46 TMP=(TEMP1+TEMP2)/2.0
GOTO 19

```

```

47 TMP=(TEMP1+TEMP2+TEMP3)/3.0

```

```

C CONVERT THE TEMPERATURE TO NELVIN

```

```

C IF (IMP,NE,999,9) TMP=IMP+273.15

```

```

C WRITE (IQU2) (TIM,IMP,AZIMUTH,ELEVATION,SLANTRANGE

```

```

C CONTINUE

```

```

C GOTO 14

```

```

C CONTINUE

```

```

C ASK THE OPERATOR TO REMOVE THE DATA DISKETTE AND REPLACE IT

```

```

C WITH THE S-DISKETTE

```

```

C

```

```

C CLOSE IQU1

```

```

C CALL RELEASE('DPI',IER)

```

```

C PAUSE 'REMOVE DATA DISK FROM DPL AND MOUNT CORWINSONDUE DISK IN DPL'

```

```

C CALL INIT('DPI')

```

```

C READ THE ID FILE TO GET THE START TIME OF THE CO-RUNIN

```

```

C AND CHECK TO MAKE SURE IT'S WITHIN LIMITS

```

```

C OPEN IQU1,'DPI:CONTROLFILE',ATT='L',LEN=110,ERR=120

```

```

C READ(IQU1)(X,I=1,7),I,ID,IM,IY,X,IT,X,I=1,10),RLAT,X,X,X,X,X,X

```

```

C RETIME=FLOAT(I1,100)*3600.0,FLOAT(I2,100)*60.0

```

```

C IF (ID,NE,IDAY,OR,IM,NE,IMON,OR,IY,NE,IYR,OR,ABS(PIM-RPIM).GT,21600.0)

```

```

C GOTO 140

```

```

C CLOSE IQU1

```

```

C CLOSE IQU2

```

```

C OPEN IQU1,'TAPE1',LEN=20

```

```

C OPEN IQU2,'TAPE2',LEN=20

```

```

C CALCULATE THE GEOPOTENTIAL GRAVITY COEFFICIENT

```

```

C AND OUTPUT THE RUN CHECKOUT TAB

```

```

C

```

```

C CALL GRAVITY

```

```

C CALL CHECKOUT(RKTIME)

```

```

C

```

```

C CALCULATE THE MID-POINT OF ALL THE DATA LEVELS

```

```

C AND CORRECT THE TEMPERATUR

```

```

C

```

```

13-53:16 29 MAR, 1984 ROCKE( REGUCTION PASS #1 - MAIN ROUTINE

```

PAGE

4

ROCS 3

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ROCS 3

END

B-126

13453416 29 MAR 1984 KUKET REDUCTION PASS #1 - MAIN ROUTINE

PAGE 6

[illegible]

```

SUBROUTINE MIDINT
  DIMENSION I(1000), J(1000), K(1000), L(1000), M(1000), N(1000), O(1000), P(1000), Q(1000), R(1000), S(1000), T(1000), U(1000), V(1000), W(1000), X(1000), Y(1000), Z(1000)
  MAXVAL = 0
  READ(1001) I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
  IF (I(1001) .EQ. 0) THEN
    IF (J(1001) .EQ. 0) THEN
      IF (K(1001) .EQ. 0) THEN
        IF (L(1001) .EQ. 0) THEN
          IF (M(1001) .EQ. 0) THEN
            IF (N(1001) .EQ. 0) THEN
              IF (O(1001) .EQ. 0) THEN
                IF (P(1001) .EQ. 0) THEN
                  IF (Q(1001) .EQ. 0) THEN
                    IF (R(1001) .EQ. 0) THEN
                      IF (S(1001) .EQ. 0) THEN
                        IF (T(1001) .EQ. 0) THEN
                          IF (U(1001) .EQ. 0) THEN
                            IF (V(1001) .EQ. 0) THEN
                              IF (W(1001) .EQ. 0) THEN
                                IF (X(1001) .EQ. 0) THEN
                                  IF (Y(1001) .EQ. 0) THEN
                                    IF (Z(1001) .EQ. 0) THEN
                                      MAXVAL = 0
                                    ELSE
                                      MAXVAL = 1
                                    END IF
                                ELSE
                                  MAXVAL = 2
                                END IF
                              ELSE
                                MAXVAL = 3
                              END IF
                            ELSE
                                MAXVAL = 4
                            END IF
                          ELSE
                                MAXVAL = 5
                            END IF
                        ELSE
                                MAXVAL = 6
                            END IF
                      ELSE
                                MAXVAL = 7
                            END IF
                    ELSE
                                MAXVAL = 8
                            END IF
                ELSE
                                MAXVAL = 9
                            END IF
              ELSE
                                MAXVAL = 10
                            END IF
            ELSE
                                MAXVAL = 11
                            END IF
          ELSE
                                MAXVAL = 12
                            END IF
        ELSE
                                MAXVAL = 13
                            END IF
      ELSE
                                MAXVAL = 14
                            END IF
    ELSE
                                MAXVAL = 15
                            END IF
  ELSE
    MAXVAL = 16
  END IF
  WRITE(1002) MAXVAL
  RETURN
END

```

AD-A163 634

IRIG STANDARDS FOR RANGE METEOROLOGICAL DATA REDUCTION
PART 2 ROCKETSONDE(U) RANGE COMMANDERS COUNCIL WHITE
SANDS MISSILE RANGE NM INTER-R. DEC 85

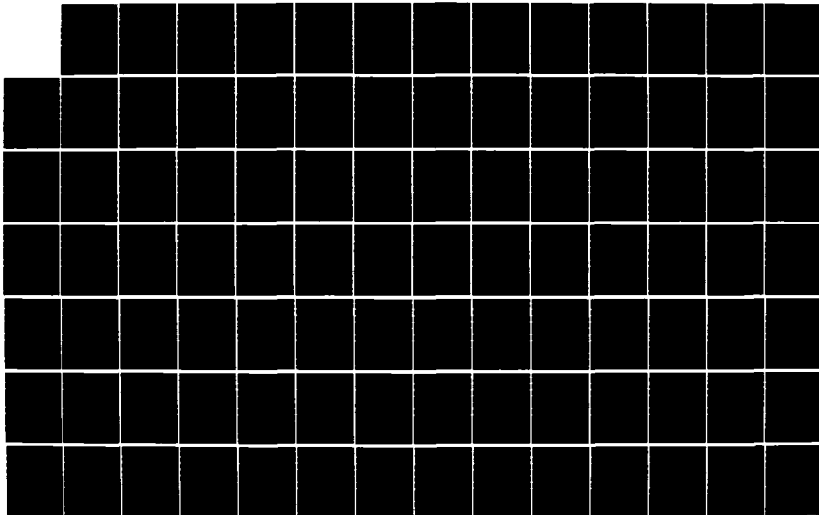
4/3

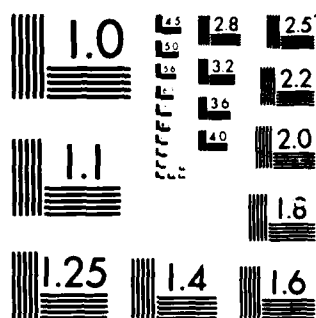
UNCLASSIFIED

IRIG-STANDARD-352-85-F-1

F/G 4/1

NL





MICROCOPY RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

[illegible]



4

•

[illegible]

```

160  * WRITE (1002) DEIGHT (C,D), EN1 EN1 (C,D), XX (C,D), YY (C,D), CORDX (C,D), CORDY (C,D),
    *  TAPE1 (C,D)
    *  C1 001 1001
    *  C1 002 1002
    *  OPEN 1001, 'TAPE1', LEN=32
    *  OPEN 1002, 'TAPE2', LEN=32
    *  DO 200 I=1,1000
    *  READ (1001, FMT=201) A
    *  CONTINUE
    *  I=I+1
    *  IF (C1.GT.1) GO TO 205
    *  DO 202 J=1,1
    *  IF (C1.NE.1) BACKSPACE 1002
    *  BACKSPACE 1002
    *  READ (1002) HA,FA,X,Y,UXA,UYA,FA,UYA
    *  IF (004.GT./0249.0) I6=999.9
    *  WRITE (1001) HA,FA,X,Y,UXA,UYA,FA,UYA
    *  CLOSE 1001
    *  CLOSE 1002
    *  OPEN 1001, 'TAPE1', LEN=32
    *  OPEN 1002, 'TAPE2', LEN=32
    *  RETURN
    *  END

```


32-30

```

SUBROUTINE FKESCOM
  INCLUDE 'DATAS'
  FFI=999.9
  KSM=0
  IHI=SM=0
  100  READ(IHI,END=99)H,F,XX,YY,UX,UY,I,UT
      HI=SNGL(GRAT*(RE+DBLE(H))/(RE+DBLE(H)))
      IF (IHI.IF=0)GOTO 10
      WRITE(IHI2)H,XX,YY,UX,UY,I,UT,FFI,F
      GOTO 100
  10  IF (HBL.EQ.0)GOTO 101
      IHI=SM=1
      IF (H-HBL).LE.3000.)GOTO 101
      KSM=1
      FFI=999.9
      IHI=999.9
      F=-999.9
      102  IF (PRI.GT.99.)GOTO 103
      FFI=ALOG10(FBL)
      GOTO 100
  103  KSM=1
      110  TP=FBL
      HP=SNGL(GRAT*(RE+DBLE(HBL))/(RE+DBLE(HBL)))
      WRITE(IHI2)HBL,XX,YY,UX,UY,TP,UT,FFI,F
      IF (IHI=SM.EQ.1)BACKSPACE IHI
      READ(IHI,END=99)H,F,XX,YY,UX,UY,I,UT
      PRSLG=999.9
      IF (KSM.EQ.1)GOTO 107
      HI=SNGL(GRAT*(RE+DBLE(H))/(RE+DBLE(H)))
      IF (I.NE.999.9.AND.IP.NE.999.9)GOTO 105
      KSM=1
      GOTO 107
  105  IY=(I+IP)/2.
      PRSLG=FFI*((HI-HP)/(SNGL(PC)*IY))
      HP=HI
      FFI=PRSLG
      IP=I
      107  WRITE(IHI2)H,XX,YY,UX,UY,I,UT,PRSLG,F
      GOTO 108
  92  CLOSE IHI1
      CLOSE IHI2
      OPEN IHI1,'KUCKEI001',LEN=80,ATT='L'
      OPEN IHI2,'TAPE2',LEN=36
      RETURN
      END

```

ROCS 3

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13:55:49 29 MAR, 1984 RUCKET REDUCTION PASS #1 - ONEKILLO

```

CALL OUTOUT (MS,KA,YA,IA,UA,FA,PA)
MAXAL1=MAXAL (1,UN)
WRITE (UNIT,1) MAXAL1
WRITE (UNIT,3) MAXAL1
FORMAT (//, ' MAXIMUM ALTITUDE ', I10)
NOMIND=100
HINT=500
IF (NSW,1,1) GO TO 106
11 (NSW,GT,2) RETURN
HINT=1000
CONT=1.942569
CON/=3.280833
GO TO 106
106
FORMAT (//, ' ALT', ' DIR', ' SPD', ' TEMP', ' PRESS', ' DENSITY', '
      ' , ' RF', ' US', ' SHR', ' /2X, A2, A4, ' , ' DEG', ' /AA, ' , ' K', ' CORR', ' ,
      ' , ' HRS', ' G/M3', ' , A4, 3X, A4, ' , ' /SEC', ' /')
END

```


SUBROUTINE FLDCH(INDATE)

IMPLICIT INTEGER

INCLUDE 'DAYS'

```

      DIMENSION I(12), J(12), K(12), L(12), M(12), N(12), O(12), P(12), Q(12), R(12), S(12), T(12), U(12), V(12), W(12), X(12), Y(12), Z(12), AA(12), AB(12), AC(12), AD(12), AE(12), AF(12), AG(12), AH(12), AI(12), AJ(12), AK(12), AL(12), AM(12), AN(12), AO(12), AP(12), AQ(12), AR(12), AS(12), AT(12), AU(12), AV(12), AW(12), AX(12), AY(12), AZ(12), BA(12), BB(12), BC(12), BD(12), BE(12), BF(12), BG(12), BH(12), BI(12), BJ(12), BK(12), BL(12), BM(12), BN(12), BO(12), BP(12), BQ(12), BR(12), BS(12), BT(12), BU(12), BV(12), BW(12), BX(12), BY(12), BZ(12), CA(12), CB(12), CC(12), CD(12), CE(12), CF(12), CG(12), CH(12), CI(12), CJ(12), CK(12), CL(12), CM(12), CN(12), CO(12), CP(12), CQ(12), CR(12), CS(12), CT(12), CU(12), CV(12), CW(12), CX(12), CY(12), CZ(12), DA(12), DB(12), DC(12), DD(12), DE(12), DF(12), DG(12), DH(12), DI(12), DJ(12), DK(12), DL(12), DM(12), DN(12), DO(12), DP(12), DQ(12), DR(12), DS(12), DT(12), DU(12), DV(12), DW(12), DX(12), DY(12), DZ(12), EA(12), EB(12), EC(12), ED(12), EE(12), EF(12), EG(12), EH(12), EI(12), EJ(12), EK(12), EL(12), EM(12), EN(12), EO(12), EP(12), EQ(12), ER(12), ES(12), ET(12), EU(12), EV(12), EW(12), EX(12), EY(12), EZ(12), FA(12), FB(12), FC(12), FD(12), FE(12), FF(12), FG(12), FH(12), FI(12), FJ(12), FK(12), FL(12), FM(12), FN(12), FO(12), FP(12), FQ(12), FR(12), FS(12), FT(12), FU(12), FV(12), FW(12), FX(12), FY(12), FZ(12), GA(12), GB(12), GC(12), GD(12), GE(12), GF(12), GG(12), GH(12), GI(12), GJ(12), GK(12), GL(12), GM(12), GN(12), GO(12), GP(12), GQ(12), GR(12), GS(12), GT(12), GU(12), GV(12), GW(12), GX(12), GY(12), GZ(12), HA(12), HB(12), HC(12), HD(12), HE(12), HF(12), HG(12), HH(12), HI(12), HJ(12), HK(12), HL(12), HM(12), HN(12), HO(12), HP(12), HQ(12), HR(12), HS(12), HT(12), HU(12), HV(12), HW(12), HX(12), HY(12), HZ(12), IA(12), IB(12), IC(12), ID(12), IE(12), IF(12), IG(12), IH(12), II(12), IJ(12), IK(12), IL(12), IM(12), IN(12), IO(12), IP(12), IQ(12), IR(12), IS(12), IT(12), IU(12), IV(12), IW(12), IX(12), IY(12), IZ(12), JA(12), JB(12), JC(12), JD(12), JE(12), JF(12), JG(12), JH(12), JI(12), JJ(12), JK(12), JL(12), JM(12), JN(12), JO(12), JP(12), JQ(12), JR(12), JS(12), JT(12), JU(12), JV(12), JW(12), JX(12), JY(12), JZ(12), KA(12), KB(12), KC(12), KD(12), KE(12), KF(12), KG(12), KH(12), KI(12), KJ(12), KK(12), KL(12), KM(12), KN(12), KO(12), KP(12), KQ(12), KR(12), KS(12), KT(12), KU(12), KV(12), KW(12), KX(12), KY(12), KZ(12), LA(12), LB(12), LC(12), LD(12), LE(12), LF(12), LG(12), LH(12), LI(12), LJ(12), LK(12), LL(12), LM(12), LN(12), LO(12), LP(12), LQ(12), LR(12), LS(12), LT(12), LU(12), LV(12), LW(12), LX(12), LY(12), LZ(12), MA(12), MB(12), MC(12), MD(12), ME(12), MF(12), MG(12), MH(12), MI(12), MJ(12), MK(12), ML(12), MM(12), MN(12), MO(12), MP(12), MQ(12), MR(12), MS(12), MT(12), MU(12), MV(12), MW(12), MX(12), MY(12), MZ(12), NA(12), NB(12), NC(12), ND(12), NE(12), NF(12), NG(12), NH(12), NI(12), NJ(12), NK(12), NL(12), NM(12), NO(12), NP(12), NQ(12), NR(12), NS(12), NT(12), NU(12), NV(12), NW(12), NX(12), NY(12), NZ(12), OA(12), OB(12), OC(12), OD(12), OE(12), OF(12), OG(12), OH(12), OI(12), OJ(12), OK(12), OL(12), OM(12), ON(12), OO(12), OP(12), OQ(12), OR(12), OS(12), OT(12), OU(12), OV(12), OW(12), OX(12), OY(12), OZ(12), PA(12), PB(12), PC(12), PD(12), PE(12), PF(12), PG(12), PH(12), PI(12), PJ(12), PK(12), PL(12), PM(12), PN(12), PO(12), PP(12), PQ(12), PR(12), PS(12), PT(12), PU(12), PV(12), PW(12), PX(12), PY(12), PZ(12), QA(12), QB(12), QC(12), QD(12), QE(12), QF(12), QG(12), QH(12), QI(12), QJ(12), QK(12), QL(12), QM(12), QN(12), QO(12), QP(12), QQ(12), QR(12), QS(12), QT(12), QU(12), QV(12), QW(12), QX(12), QY(12), QZ(12), RA(12), RB(12), RC(12), RD(12), RE(12), RF(12), RG(12), RH(12), RI(12), RJ(12), RK(12), RL(12), RM(12), RN(12), RO(12), RP(12), RQ(12), RR(12), RS(12), RT(12), RU(12), RV(12), RW(12), RX(12), RY(12), RZ(12), SA(12), SB(12), SC(12), SD(12), SE(12), SF(12), SG(12), SH(12), SI(12), SJ(12), SK(12), SL(12), SM(12), SN(12), SO(12), SP(12), SQ(12), SR(12), SS(12), ST(12), SU(12), SV(12), SW(12), SX(12), SY(12), SZ(12), TA(12), TB(12), TC(12), TD(12), TE(12), TF(12), TG(12), TH(12), TI(12), TJ(12), TK(12), TL(12), TM(12), TN(12), TO(12), TP(12), TQ(12), TR(12), TS(12), TT(12), TU(12), TV(12), TW(12), TX(12), TY(12), TZ(12), UA(12), UB(12), UC(12), UD(12), UE(12), UF(12), UG(12), UH(12), UI(12), UJ(12), UK(12), UL(12), UM(12), UN(12), UO(12), UP(12), UQ(12), UR(12), US(12), UT(12), UY(12), UZ(12), VA(12), VB(12), VC(12), VD(12), VE(12), VF(12), VG(12), VH(12), VI(12), VJ(12), VK(12), VL(12), VM(12), VN(12), VO(12), VP(12), VQ(12), VR(12), VS(12), VT(12), VU(12), VV(12), VW(12), VX(12), VY(12), VZ(12), WA(12), WB(12), WC(12), WD(12), WE(12), WF(12), WG(12), WH(12), WI(12), WJ(12), WK(12), WL(12), WM(12), WN(12), WO(12), WP(12), WQ(12), WR(12), WS(12), WT(12), WU(12), WV(12), WW(12), WX(12), WY(12), WZ(12), XA(12), XB(12), XC(12), XD(12), XE(12), XF(12), XG(12), XH(12), XI(12), XJ(12), XK(12), XL(12), XM(12), XN(12), XO(12), XP(12), XQ(12), XR(12), XS(12), XT(12), XU(12), XV(12), XW(12), XX(12), XY(12), XZ(12), YA(12), YB(12), YC(12), YD(12), YE(12), YF(12), YG(12), YH(12), YI(12), YJ(12), YK(12), YL(12), YM(12), YN(12), YO(12), YP(12), YQ(12), YR(12), YS(12), YT(12), YU(12), YV(12), YW(12), YX(12), YY(12), YZ(12), ZA(12), ZB(12), ZC(12), ZD(12), ZE(12), ZF(12), ZG(12), ZH(12), ZI(12), ZJ(12), ZK(12), ZL(12), ZM(12), ZN(12), ZO(12), ZP(12), ZQ(12), ZR(12), ZS(12), ZT(12), ZU(12), ZV(12), ZW(12), ZX(12), ZY(12), ZZ(12)

```

WRITE (IOUT, 1) I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

END

RETURN

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

END

CONFIDENTIAL

LS:57:57 29 MAR, 1984

ROCS 3

STANDARD END GRAVITY
CORRECTION TO GRAVITY REDUCTION IN GRAVITY FACTOR
ENCLOSURE DATA
N=2
R=61.75 (R=61.75/29.424)
CORR=1 (6.6676/28 (COS(R/4))) (6.66666659 (COS(R/4))) (6.66)
RETURN
END

PAGE

1458412 19 MAR 1984 KUCKEL REDUCTION PASS #1 - GRAVITY

13:58:23	29 MAR, 1984	FOUNTAIN REDUCTION PASS #1	CONF. ROWEN	PAGE
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R-147

13:58:23	29 MAR, 1984	RUCKET REDUCTION PASS #1 - COMP RAMIN	PAGE
			2


```

TMPDIF(J)=A-RSTMP(J)
WRITE(10U3,9)HEIGHT(J),A,RSTMP(J),TMPDIF(J)
FORMAT(1X,17,F10.2,F11.2,E12.1)
133 IF(HEIGHT(J).GE.Z1)GOTO 131
J=J+1
IF(J.GT.41.OR.HEIGHT(J).EQ.0.0)GOTO 150
GOTO 132
131 Z=Z1
I=I1
140 CONTINUE
C-----
150 K=1
KK=9
A=0.0
DO 150 I=K,KK
IF(HEIGHT(I).EQ.0.0)GOTO 999
160 A=A+ABS(TMPDIF(I))
A=A/9.
IF(A.GT.2.5)GOTO 170
HBL=HEIGHT(K)
TBL=RSTMP(K)+273.15
PBL=RPRS(K)
REWIND 10U1
RETURN
170 K=K+1
KK=KK+1
IF(KK.LE.41)GOTO 155
999 HBL=HEIGHT(1)
PBL=TBL=999.9
REWIND 10U1
RETURN
END

```

R-144

```

SUBROUTINE CHKOUT(KOUT TIME)
  DO 1 T=1,K,1, THE COUNT ON PRINTER
  AND WRITES 1, TIME, X, Y, AND Z ON CRIVE 1 IN BINARY
  INTEGER TODAY(3), CLOCK(3)
  INCLUDE 'DATAS'
  COMMON/XYZ/N, G, H, I
  FORMAT(1, TIME, 5X, 'ELEVATION', 10X, 'HGT MTS',
  * 'AZIMUTH', 'ELEVATION', /X, 'RANGE', 'AL',
  * 'TIME', /)
  IF (I003, NE, 3) GO TO 110
  CALL DATE (TODAY, IER)
  CALL TIME (CLOCK, IER)
  WRITE (I003, 10) IER, STATION ID, TODAY(2), MINTAR(TODAY(1)), TODAY(3), CLOCK
  FORMAT(1, 'ST', '3A2', 'ASCENT NUMBER: ', 2A2, 9X, 15A2, 9X,
  * 'RUN DATE ', 12, 1X, 4A, 14, ' RUN TIME ', 12, 1, 12, 1, 12)
  CONTINUE
  IF (I003, NE, 3) GO TO 120
  WRITE (I003, 9) KOUT TIME, DAY, MONTH, YR, ISONDE, SONGE
  FORMAT(1X, 6A, 2, '12', 1X, 4A, 14, 80X, 'SUPER LONG DATASOUNDIE PUN-'
  * A2, A13)
  WRITE (I003, 5)
  CONTINUE
  D1=0.0
  D2=0.0
  D3=0.0
  D4=0.0
  D5=0.0
  D6=0.0
  D7=0.0
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```

ROCS 3

71-2
WRITE TIME, TIME, AND Z ON TAPE
WRITE (CLOCK), TIME, X, Y, Z
CONTINUE
CLOSE T001
CLOSE T002
OPEN T001, TAPE 1, LEN=20
OPEN T002, TAPE 2, LEN=24
RETURN
END

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13158:59 29 MAR, 1984 KUCKET REDUCTION PASS #1 - CHECKOUT

PAGE
2

ROCS 3

```
FUNCTION TGF (L,CHARAY,INDEX)  
  UNL (L,R,CHARAY,C)  
  IF (L=1) THEN  
    TGF (L,R,CHARAY,C)=INDEX  
  ELSE  
    TGF (L,R,CHARAY,C)=TGF (L,R,CHARAY,C)+1  
  END IF  
  RETURN  
END
```

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```

SUBROUTINE FUDC(CHNRAY, TIME, X, Y, V, U, DE)
  DIMENSION CHNRAY(3)
  TPOINT = (TIME - X(1)) / 2
  IF (MOD(CTIME, X(2)) .EQ. 0) GO TO 1
  CHNRAY(1:3) = MOD(CABS(CHNRAY(1:3) * 256) + 104816, 256)
  R1 TURN
  CHNRAY(1:3) = (CHNRAY(1:3) * 256) * 256 + 104816
  KFTURN
  END

```

PAGE

ROCKET REDUCTION PASS #1 - FUDC

13:59:50 29 MAR, 1984

ROCS 3

100
FUNCTION WHEN(CX,YY)
IF(CX,RR,0,0)GO TO 100
IF(CY,DE,0,0)WHEN=350,0
IF(CY,1,0,0)WHEN=380,0
RE TURN
IF(ATE(CY/XX)KSZ,2,2)ZU
WHEN=20,0 IF
IF(CX,61,0,0)WHEN=20,0 IF
IF(WHEN,1,0,0)WHEN=350,0
RE TURN
END

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PAGE

WHEN

PASS #1

1984

29 MAR

14

ROCKET REDUCTION PASS #1 -- WSPH

14: 0:13 29 MAR 1984

ROCS 3

TABLE FOR VALUATION
OF THE 1984-1985
FISCAL YEAR
IN THE 1984-1985
FISCAL YEAR
IN THE 1984-1985
FISCAL YEAR
IN THE 1984-1985
FISCAL YEAR

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PAGE

ROCKET REDUCTION PASS #1 - VALUATION

1984-1985 1984-1985

	ROCKET TABLE GENERATOR	INDEX
14: 0:33	29 MAR, 1984	

ROCS 3

PASS 2

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1.0 Module Description

1.1 Main Routine

Initializes the various control and conversion constants, and controls the flow of data through the subroutines.

1.2 Subroutine ETFORM

Formats data for entry into the high altitude data formatting routine to develop data for archiving and publication.

1.3 Subroutine CODIT

Final formatting and output routine for data developed in Subroutine ETFORM.

1.4 Subroutine RDRAWIN

Reads co-rawinsonde data for input into the archiving and publication formatting program.

1.5 Subroutine ROCOB

Encodes all rocketsonde parameters into the international ROCOB code and stores data for later transmission.

1.6 Subroutine MANDL

Mandatory data level inserter called by ROCOB to place data levels into the proper place in the code.

1.7 Subroutine LEFTZERO

Inserts leading zeros on integer numbers when required for output.

1.8 Subroutine TSIGN

Converts a decimal integer to a positive or negative character.

1.9 Function VALUE

Interpolates for a value or sets missing data to nines.

1.10 Function WDIR

Computes wind direction in meteorological polar coordinate system.

1.11 Function WSPD

Computes wind velocity using velocity components as input data.

2.0 MATHEMATICAL DESCRIPTION**2.1 Main Routine**

None

2.2 Subroutine ETFORM**2.2.1 Conversion of Baseline Height to Nearest Geopotential Decameter**

$$H = \{ [\text{GRAT} \cdot (\text{Re} \cdot Z) / (\text{Re} + Z)] + 5 \} / 10$$

where H = baseline height, geopotential decameters

GRAT = ratio of local acceleration of gravity to acceleration of gravity at 45 degrees latitude

Re = mean radius of the Earth, meters

Z = geometric height, meters

5 = rounding factor

10 = converts meters to decameters

2.2.2 Computation of Baseline Pressure

$$P = (10^{\text{PL}} \cdot 100) + 0.5$$

where P = baseline pressure

PL = log of baseline pressure

100 = formats pressure for output

0.5 = rounding factor

2.2.3 Computation of an Interpolation Ratio for Significant Level Checking

$$K = (H - \text{HB}) / (\text{HA} - \text{HB})$$

where K = interpolation ratio

H = height of level being checked

HA = height, upper level

HB = height, lower level

2.2.4 Interpolation for Significant Level Test Temperature

$$\text{ST} = K \cdot (\text{TA} - \text{TB}) + \text{TB}$$

where ST = significant level test temperature, degrees Kelvin

K = interpolation ratio

TA = temperature, upper level, degrees Kelvin

TB = temperature, lower level, degrees Kelvin

2.2.5 Computation of an Interpolation Ratio for Obtaining Even Decameter Data

$$K = (H1 - HB)/(HA - HB)$$

where K = interpolation ratio

H1 = output height, meters

HA = height, lower level, meters

HB = height, upper level, meters

2.2.6 Conversion of Output Height to Decameters

$$H = H1/10$$

where H = height, decameters

H1 = height, meters

10 = conversion factor

2.2.7 Interpolation for Output Parameters

$$X = K \cdot (XA - XB) + XB$$

$$Y = K \cdot (YA - YB) + YB$$

$$T = K \cdot (TA - TB) + TB$$

$$P = K \cdot (PA - PB) + PB$$

$$F = K \cdot (FA - FB) + FB$$

$$UX = K \cdot (UXA - UXB) + UXB$$

$$UY = K \cdot (UYA - UYB) + UYB$$

where X = output east-west position component

XA = lower level east-west position component

XB = upper level east-west position component

Y = output north-south position component

YA = lower level north-south position component

YB = upper level north-south position component

T = output temperature

TA = lower level temperature

TB = upper level temperature

P = output log of pressure

PA = lower level log of pressure

PB = upper level log of pressure

F = output fall rate

FA = lower level fall rate

FB = upper level fall rate

UX = output uncorrected east-west position component

UXA = lower level uncorrected east-west position component

UXB = upper level uncorrected east-west position component

UY = output uncorrected north-south position component

UYA = lower level uncorrected north-south position component

UYB = upper level uncorrected north-south position component

K = interpolation ratio

2.2.8 Computation of an Interpolation Ratio for Obtaining the Constant Pressure Output Data

$$K = (P - PB)/(PA - PB)$$

where K = interpolation ratio

P = log of pressure, mandatory output levels

PA = log of pressure, lower level

PB = log of pressure, upper level

2.2.9 Interpolation for Height, East-West Position Component, North-South Position Component, Uncorrected East-West Position Component, Uncorrected North-South Position Component, Temperature, Uncorrected Temperature, and Fall Rate

ROCS 3

$$X = K \cdot (XA - XB) + XB$$

$$Y = K \cdot (YA - YB) + YB$$

$$T = K \cdot (TA - TB) + TB$$

$$P = K \cdot (PA - PB) + PB$$

$$F = K \cdot (FA - FB) + FB$$

$$UX = K \cdot (UXA - UXB) + UXB$$

$$UY = K \cdot (UYA - UYB) + UYB$$

where

X = output east-west position component

XA = lower level east-west position component

XB = upper level east-west position component

Y = output north-south position component

YA = lower level north-south position component

YB = upper level north-south position component

T = output temperature

TA = lower level temperature

TB = upper level temperature

P = output log of pressure

PA = lower level log of pressure

PB = upper level log of pressure

F = output fall rate

FA = lower level fall rate

FB = upper level fall rate

UX = output uncorrected east-west position component

UXA = lower level uncorrected east-west position component

UXB = upper level uncorrected east-west position component

UY = output uncorrected north-south position component

UYA = lower level uncorrected north-south position component

UYB = upper level uncorrected north-south position component

K = interpolation ratio

2.3 Subroutine CODIT**2.3.1 Computation of Velocity of Sound**

$$VS = 331.45 \cdot (T/273.15)^{1/2}$$

where VS = velocity of sound, meters per second

T = temperature, degrees Kelvin

331.45 = speed of sound at zero degree Celsius, meters/second

2.3.2 Computation of Barometric Pressure

$$P = 10^{PL}$$

where P = barometric pressure (millibars)

PL = log of barometric pressure

2.3.3 Computation of Density

$$\rho = 348.38 \cdot (P/T)$$

where ρ = density, grams per cubic meter

P = barometric pressure, millibars

T = temperature, degrees Kelvin

348.38 = gas constant for dry air and conversion factors, with pressure in millibars and density in grams/cubic meter

2.4 Subroutine RDRAWIN

None

2.5 Subroutine ROCOB

None

2.6 Subroutine MANDL

None

2.7 Subroutine LEFTZERO

None

2.8 Subroutine TSIGN

None

2.9 Function VALUE

None

2.10 Function WDIR

2.10.1 Computation of Wind Direction

$$D = \tan^{-1} (Y/X) \cdot 57.29578$$

If $X < 0$,

then $WDIR = 270 - D$

If $X > 0$,

then $WDIR = 90 - D$

If $X = 0$ and $Y \geq 0$

then $WDIR = 360$

If $X = 0$ and $Y < 0$

then $WDIR = 180$

where $WDIR$ = wind direction, meteorological polar coordinates

D = wind direction, Cartesian coordinates

X = east-west velocity vector

Y = north-south velocity vector

57.29578 = degrees in a radian

2.11 Function WSPD

2.11.1 Computation of Windspeed

$$WSPD = \sqrt{X^2 + Y^2}$$

where $WSPD$ = windspeed

X = east-west velocity vector

Y = north-south velocity vector

3.0 INPUT

Input to Pass 2 is from four sources. First is the scratch file output from Pass 1, second is for the constant altitude data output from Pass 1, third is the options that are input in conversational mode, and fourth is the co-rawinsonde data.

ROCS 3

The scratch file is as follows:

Words	Contents
1—2	Altitude, meters
3—4	East-west velocity component, meters/second
5—6	North-south velocity component, meters/second
7—8	Uncorrected east-west velocity component, meters/second
9—10	Uncorrected north-south velocity component, meters/second
11—12	Temperature (degrees K)
13—14	Uncorrected temperature (degrees K)
15—16	Barometric pressure, millibars
17—18	Fall rate, meters/second

Constant Altitude Data

Height	Geometric feet or meters at standard intervals of 1 km, 250 meters, and 1,000 feet
Wind Direction	In degrees from true north. Missing data is shown as 999
Windspeed	In knots or meters/second; calm is 000 and missing is 999
Temperature	In degrees Kelvin
Temperature Correction	In degrees Kelvin
Atmospheric Pressure	Millibars
Atmospheric Density	Grams/cubic meter
Fall Rate	In feet/second or meters/second (determined by height units)
Speed of Sound	In knots or meters/second (determined by height units)
Wind Shear	Seconds ⁻¹

Sample Options Dialogue

Prompt	Operator Input
Output to console or printer (CNS/PRT)	PRT

ROCS 3

Co-Rawinsonde Data Format

Control File

Word	Contents
1	Units switch (feet/meters)
2	Winds in feet/second switch
3	Interpolation switch
4	Output device indicator
5	Optical index of refraction units switch
6	Wind shear in knots switch
7—8	Surface wind x component
9—10	Surface wind y component
11—12	Surface wind direction
13—14	Surface windspeed
15	Station number
16	Day
17	Month
18	Year
19—20	Altitude increment (feet)
21	Release time
22—23	Tropopause wind direction (degrees from true north)
24—25	Tropopause time (seconds)
26—27	Tropopause geopotential height (feet)
28—29	Tropopause dew point (degrees C)
30—31	Tropopause geometric height (feet)
32—33	Tropopause refractive index (optical/N)
34—35	Tropopause pressure (millibars)
36—37	Tropopause temperature (degrees C)
38—39	Tropopause relative humidity (percent)
40—41	Tropopause wind speed (knots/feet/second/meters/second)
42—45	Station latitude (double precision) (degrees)
46—47	Termination height (geometric feet)
48—49	Termination pressure (millibars)
50—54	Flight identification
55	Sonde type

ROCS 3

Significant File

Words	Contents
1—2	Altitude (feet, geometric)
3	Wind direction (degrees)
4	Windspeed (meters/second)
5—6	Temperature (degrees C)
7—8	Dew point (degrees C)
9—10	Pressure (millibars)
11—12	Refractive index (N units)
13—14	Relative humidity (percent)

Mandatory File

Words	Contents
1—2	Altitude (feet, geopotential)
3	Wind direction (degrees)
4	Windspeed (meters/second)
5—6	Temperature (degrees C)
7—8	Dewpoint (degrees C)
9—10	Pressure (millibars)
11—12	Relative humidity (percent)

Tabulation File

Words	Contents
1—2	Altitude (feet, geometric)
3—4	Wind direction (degrees)
5—6	Windspeed (meters/second)
7—8	Temperature (degrees C)
9—10	Dew point (degrees C)
11—12	Pressure (millibars)
13—14	Relative humidity (percent)
15—16	Absolute humidity (grams/cubic meter)
17—18	Density (grams/cubic meter)
19—20	Index of refraction (N)
21—22	Velocity of sound (knots)
23—24	Shear velocity (seconds ⁻¹)
25—26	Vapor pressure (millibars)
27—28	Precipitable water (millimeters)

4.0 OUTPUT

Output consists of the HAMDATA file and the ROCOB file. The first part of the HAMDATA file is as follows:

Words	Contents
1	Height, geometric decameters for the significant and mandatory data levels, geopotential decameters for the constant pressure levels
2—4	Wind direction (degrees from true north)
5	Windspeed (meters/second)
6	Uncorrected north-south velocity component (meters/second)
7	Uncorrected east-west velocity component (meters/second)
8	North-south velocity component (meters/second)
9	East-west velocity component (meters/second)
10	Fall rate (meters/second)
11	Temperature (degrees C)
12	Temperature (degrees C)
13—15	Barometric pressure (millibars)
16—18	Density (grams/cubic meter)
19	Velocity of sound (meters/second)

The second part of the HAMDATA file consists of the data in the mandatory and significant parts of the co-rainsonde data and is as follows:

Mandatory File

Words	Contents
1—2	Altitude (feet, geopotential)
3	Wind direction (degrees)
4	Windspeed (knots)
5—6	Temperature (degrees C)
7—8	Dewpoint (degrees C)
9—10	Pressure (millibars)
11—12	Relative humidity (percent)

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Significant File

Words	Contents
1-2	Altitude (feet)
3	Wind direction (degrees)
4	Windspeed (meters/second)
5-6	Temperature (degrees C)
7-8	Dewpoint (degrees C)
9-10	Pressure (millibars)
11-12	Refractive index (N units)

The ROCOB file is described in *Federal Meteorological Handbook 10* as follows:

ROCKETSONDE MESSAGE CODE

SECTION A - INTRODUCTION

1.1 A ROCOB report or a bulletin of ROCOB reports from a land rocketsonde station is identified by $M_i M_j M_k M_l = RRXX$. The identifier for ROCOB SHIP is SSXX. (The name ROCOB or ROCOB SHIP shall not be included in the report.)

1.2 The code form is divided into three sections as follows:

SECTION 1 - Identification data

SECTION 2 - Data for specified geometric altitudes

SECTION 3 - Data for isobaric surfaces (optional)
(Sections 2 and 3 cannot be transmitted as a separate report.)

SECTION B - MESSAGE FORMAT

1.1 FM39.F ROCOB - Upper-level temperature and wind (possibly air density) report from land rocketsonde station.

SECTION 1	$M_i M_j M_k M_l$	YYCG _g	IIiii	$a_1 e_1 \epsilon_1 c_1 m_1 r_1$	$r_1 m_1 w_1 w_1 w_1 r_1$
SECTION 2	HHZ _T TT	ddfff	(9d _p P ₁ P ₁ P ₁)		
	HHZ _T TT	ddfff	(9d _p P ₁ P ₁ P ₁)		
		

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SECTION 3	11Z _T T ₁ T ₁	P ₁ P ₁ h ₁ h ₁ h ₁	ddfff

	11Z _T T _n T _n	P _n P _n h _n h _n h _n	d _n d _n f _n f _n f _n
	22Z _T T ₁ T ₁	P ₁ P ₁ h ₁ h ₁ h ₁	d ₁ d ₁ f ₁ f ₁ f ₁

	22Z _T T _n T _n	P _n P _n h _n h _n h _n	d _n d _n f _n f _n f _n
	33...
	44...
	etc.		

SECTION C - DEFINITIONS

1.1 Symbolic form table for land stations

M_iM_iM_iM_i = R R X X - ROCOB report from a land station

YY = Day of the month (GMT) on which the observation was taken.

GG_g = Time of launch in hours and nearest tens of minutes GMT

MM = Month of year (01 = Jan, 12 = Dec. etc.)

JJJ = Year (980 = 1980, 981 = 1981, etc.)

IIiii = International Index Number of the observing station (IT = Block Nbr and iii = Station Nbr, both given in H.O. Pub. No. 119.)

a₁ = Reason for no report and ground equipment employed (Code Table 1).

e_Te_T = Type of thermodynamic sensing equipment (Code Table 2).

c_T = Thermodynamic correction technique (Code Table 3).

m_r = Method of reducing data in temperature or wind group (Code Table 4).

r_m = Type of rocket motor (Code Table 5).

e_we_w = Type of wind sensing equipment (Code Table 6).

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- e_w = Wind correction technique (Code Table 3).
- HH = Altitude, in kilometers, of the level for which data are reported.
- Z_T = Character of the temperature reported by TT (Code Table 7).
- TT = Air temperature in whole degrees Celsius at the altitude given by HH. (For a temperature of -570, the coding is TT=57 and $Z_T=5$.) When temperature is missing, two solidi (//) are reported for TT.
- dd = True direction, in tens of degrees, from which the wind is blowing at the altitude given by HH (Code Table 8). (See note below fff.)
- fff = Windspeeds are preferred in meters/sec at the altitude given by HH. If windspeeds are given in knots, 50 will be added to YY.

NOTE: (1) When wind direction or speed are missing, use solidi for ddff as appropriate.

(2) The thickness of the layer through which wind direction and speed are determined shall be 2 km for both mandatory and significant levels; i.e., 1 km on each side of the altitude reported.

9 = Indicator figure for the density group, $9d_p P_1 P_1 P_1$.

d_p = Decimal point locator. The number of places to the left of the third significant figure. The decimal point must be so placed as to obtain the actual density in g/m^3 by $P_1 P_1 P_1$.

NOTE: The third significant figure is always included in the value reported for symbol d_p .

EXAMPLE:

Assume $120 g/m^3$, the group is coded 90120 (i.e., $d_p = 0$).

Assume $1.20 g/m^3$, the group is coded 92120 (i.e., $d_p = 2$).

Assume $0.281 g/m^3$, the group is coded 93281 (i.e., $d_p = 3$).

Assume $0.0788 g/m^3$, the group is coded 94788 (i.e., $d_p = 4$).

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$P_1 P_1 P_1$ = Density in gm/m^3 rounded to three significant figures at the altitude given by HH.

11 = Indicator figures - Standard isobaric surface data follow;

temperature ($Z_{T_1 T_1} \dots Z_{T_n T_n}$) is reported in the same manner as in section 2, pressure $P_1 P_1 \dots P_n P_n$ is reported in whole millibars, altitude ($h_1 h_1 h_1 \dots h_n h_n h_n$) is reported in geopotential hectometers.

22 = Indicator figures - Standard isobaric surface data follow; temperature is reported in the same manner as in Section 2, pressure is reported in tenths of a millibar and altitude reported in geopotential hectometers.

33 = Indicator used for reporting pressure in hundredths of a millibar and altitude in geopotential hectometers.

44 = Indicator used for reporting pressure in thousandths of a millibar and altitude in geopotential hectometers.

55 = Indicator used for reporting pressure in ten-thousandths of a millibar and altitude in geopotential hectometers.

66 = Indicator used for reporting pressure in hundred-thousandths of a millibar and altitude in geopotential kilometers.

$d_1 d_1$ = Wind direction in tens of degrees (Code Table 8) at the reported isobaric surfaces.

$f_1 f_1 f_1$ = Windspeed in meters/sec at the reported isobaric surfaces.

5.0 ALGORITHMS

5.1 Subroutine MANDL

Convert mandatory level pressure to whole number for output in Rocket code using

$$IPS = (10^{PL(J)} + F1) (10^{JS}/10)$$

where IPS = pressure at mandatory level encoded as a whole number

PL(J) = log of the pressure at the mandatory level being converted to a whole number

F1 = round off factor used to move decimal point; this factor is based on PL(J)

If PL(J) < 0, F1 = 0.05
 < -1, F1 = 0.005
 < -2, F1 = 0.0005
 < -3, F1 = 0.00005
 < -4, F1 = 0.000005

JS = intermediate factor based on the pressure level indicator J which is set by the number of levels processed

If J ≥ 31, JS = 6
 < 31, JS = 5
 < 26, JS = 4
 < 21, JS = 3
 < 16, JS = 2
 < 10, JS = 1

5.2 Subroutine TSIGN

Convert the tenths value of temperature to a positive or negative character.

The temperature is read as a positive or negative real number. If it is positive the tenths value is converted to a character number. If it is negative the tenths value is converted to a coded character.

Numeric Value	Character
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7

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Numeric Value	Character
8	8
9	9
-0	!
-1	J
-2	K
-3	L
-4	M
-5	N
-6	O
-7	P
-8	Q
-9	R

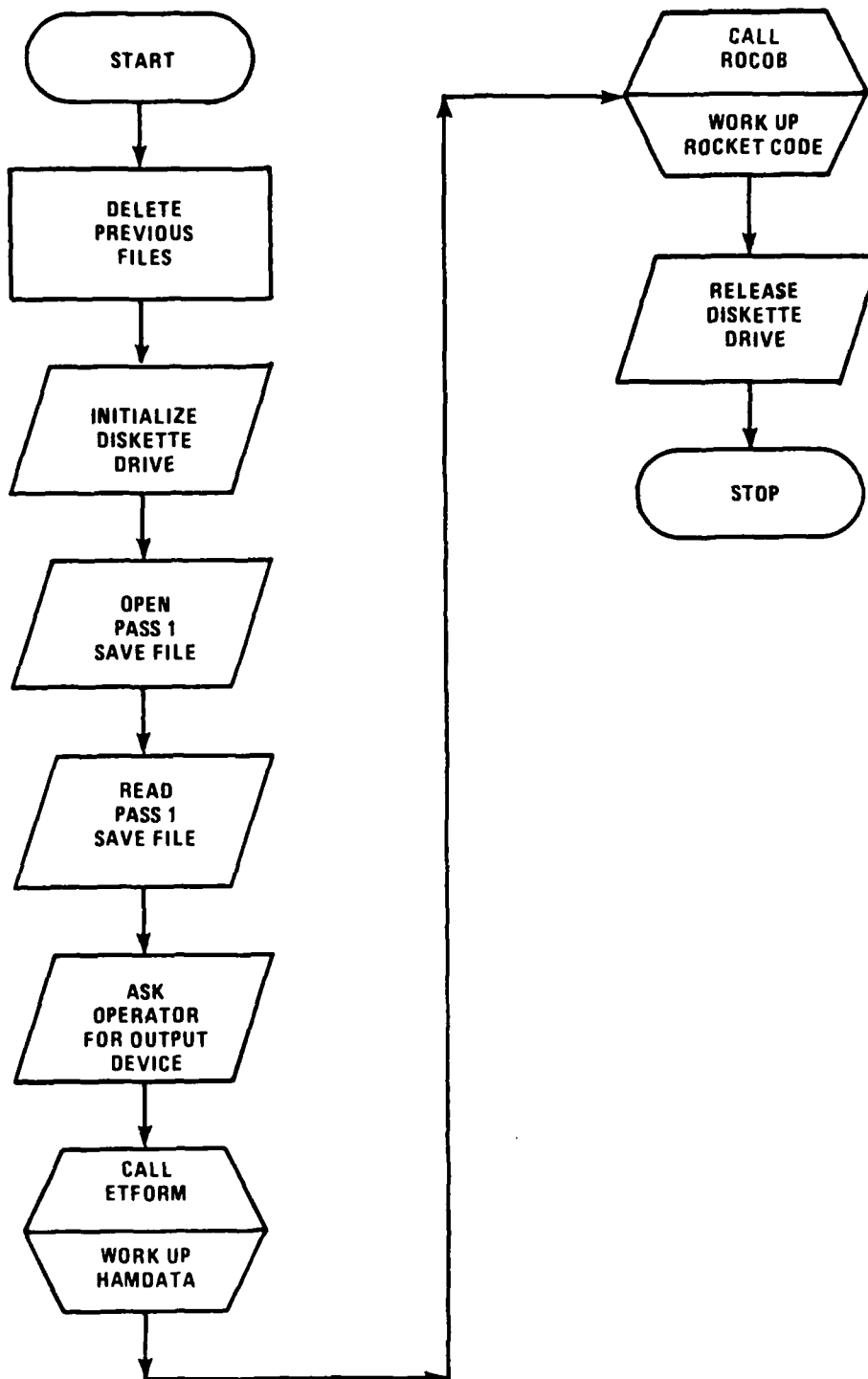
5.3 Subroutine LEFTZERO

Generate an array of single digit numbers from successive divisions of the input integer number. This routine is used to put leading zeros on integer numbers for output formatting.

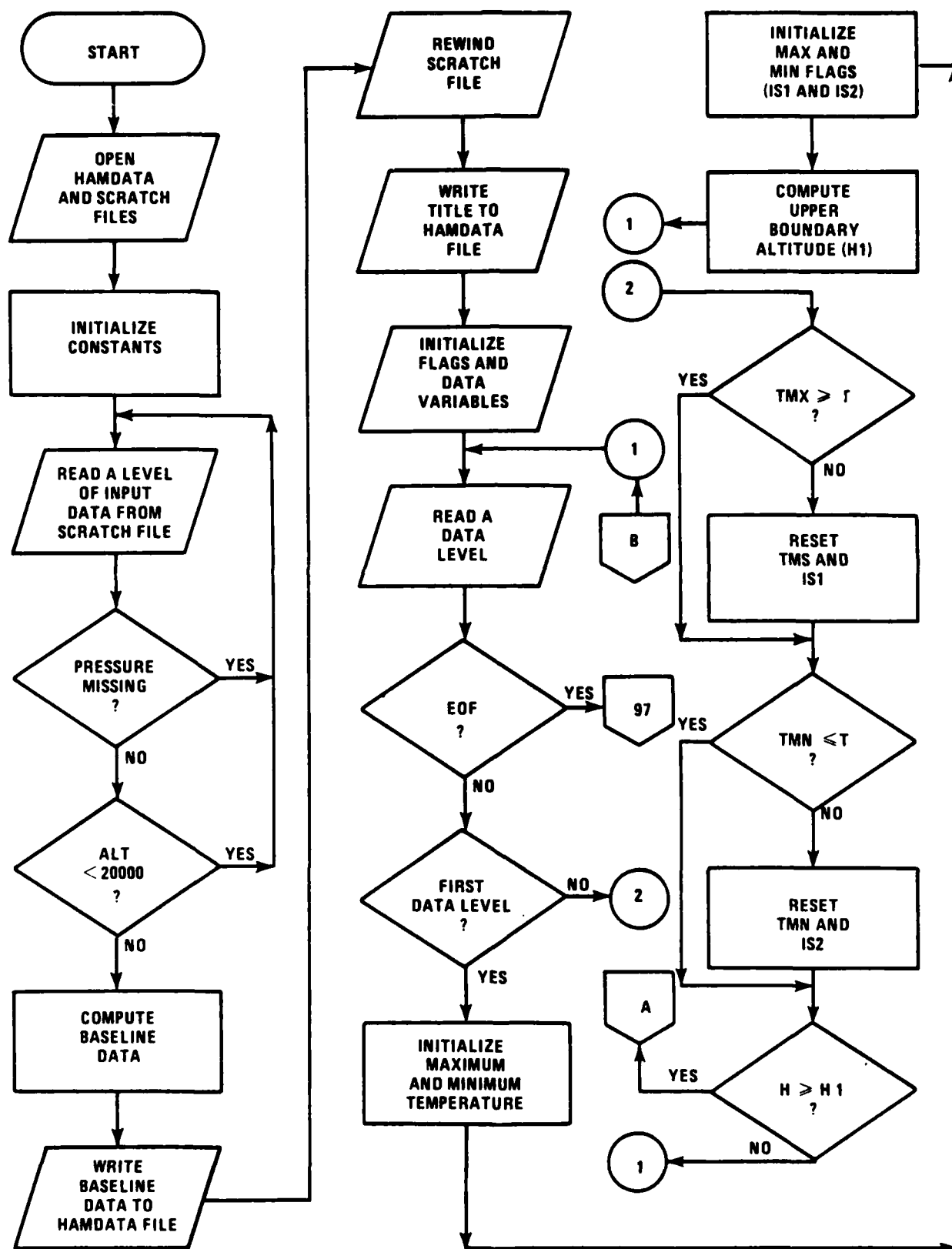
6.0 FLOWCHARTS

See the following pages.

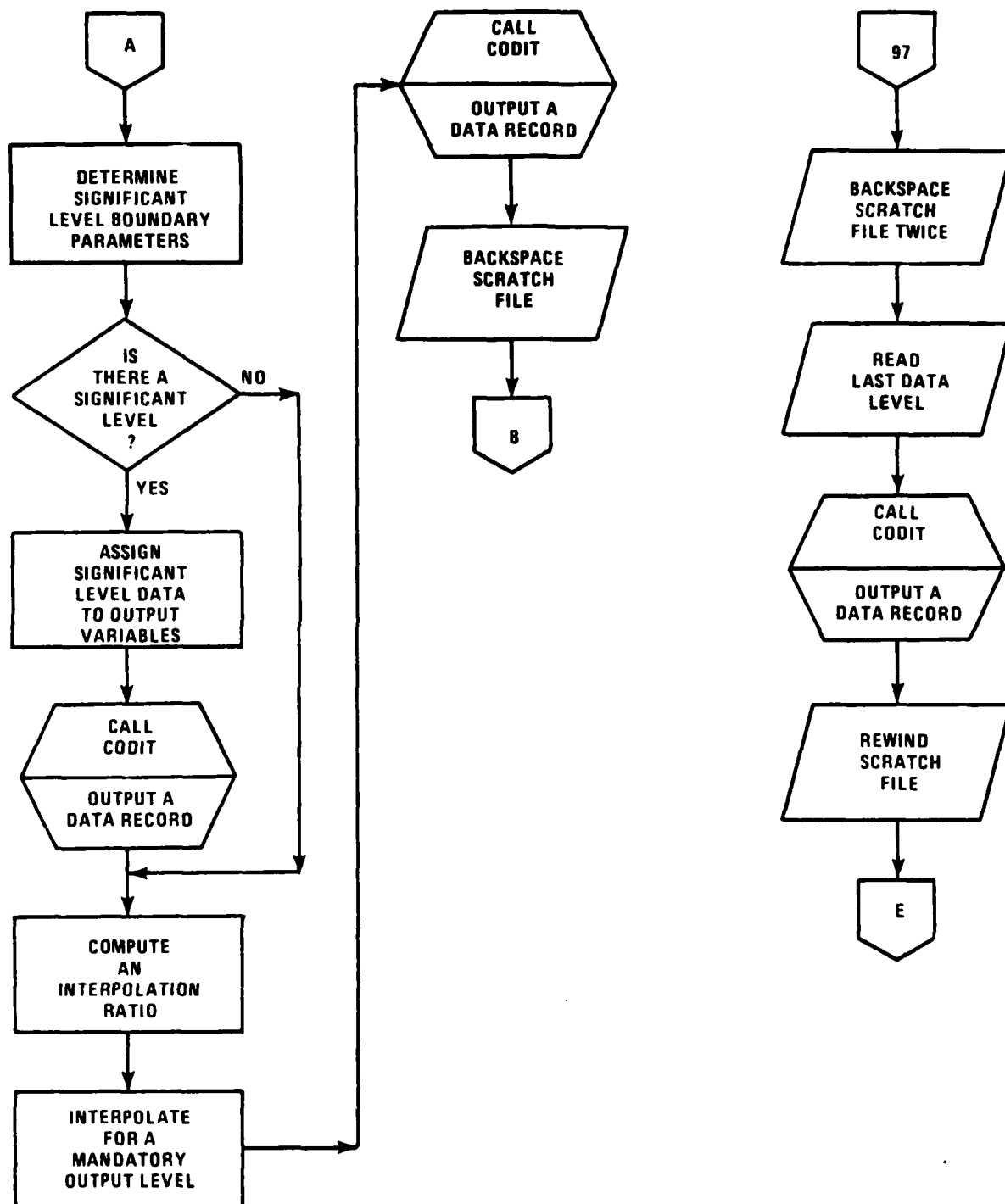
6.1 Main Routine - Pass 2



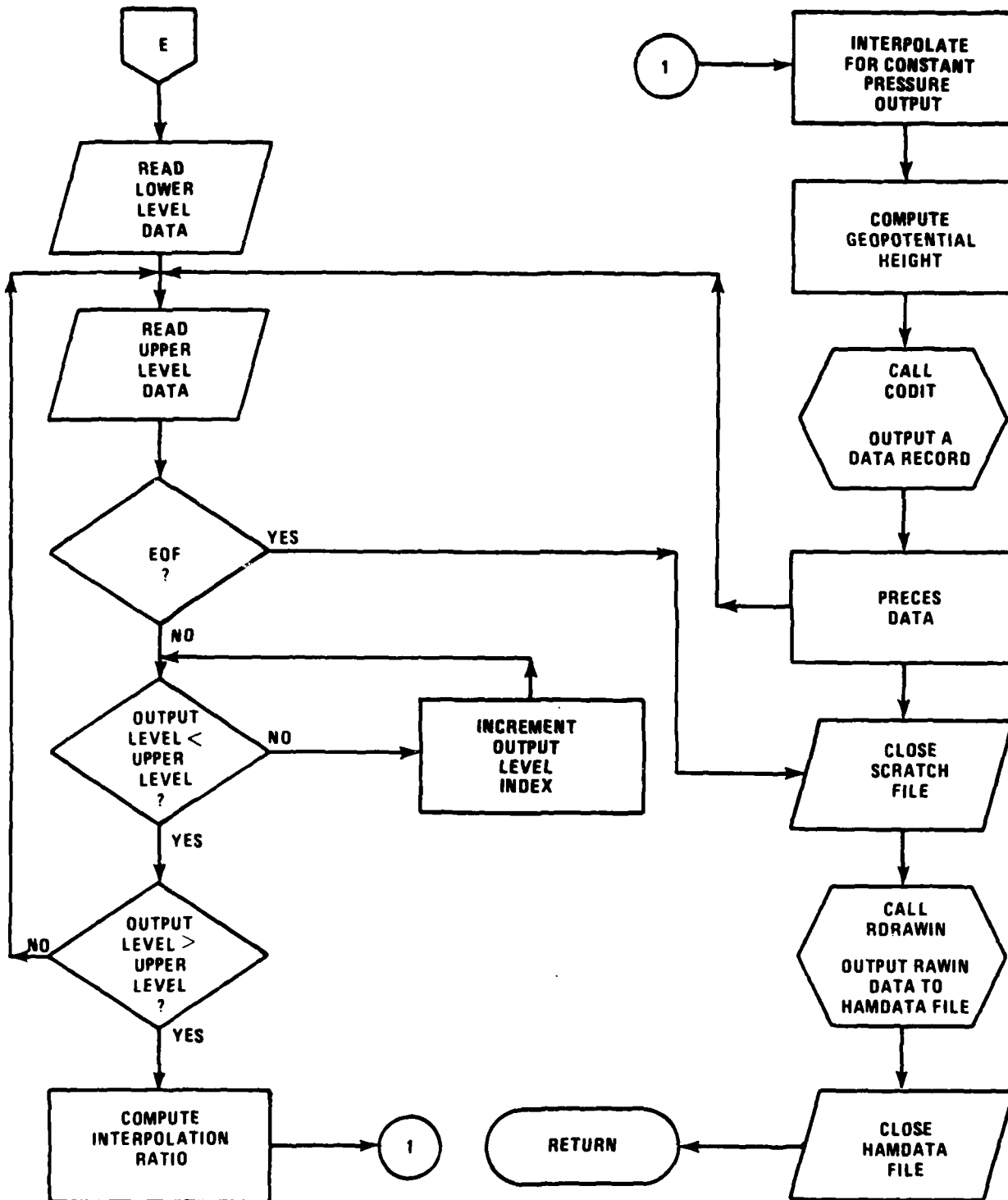
6.2.1 Subroutine ETFORM



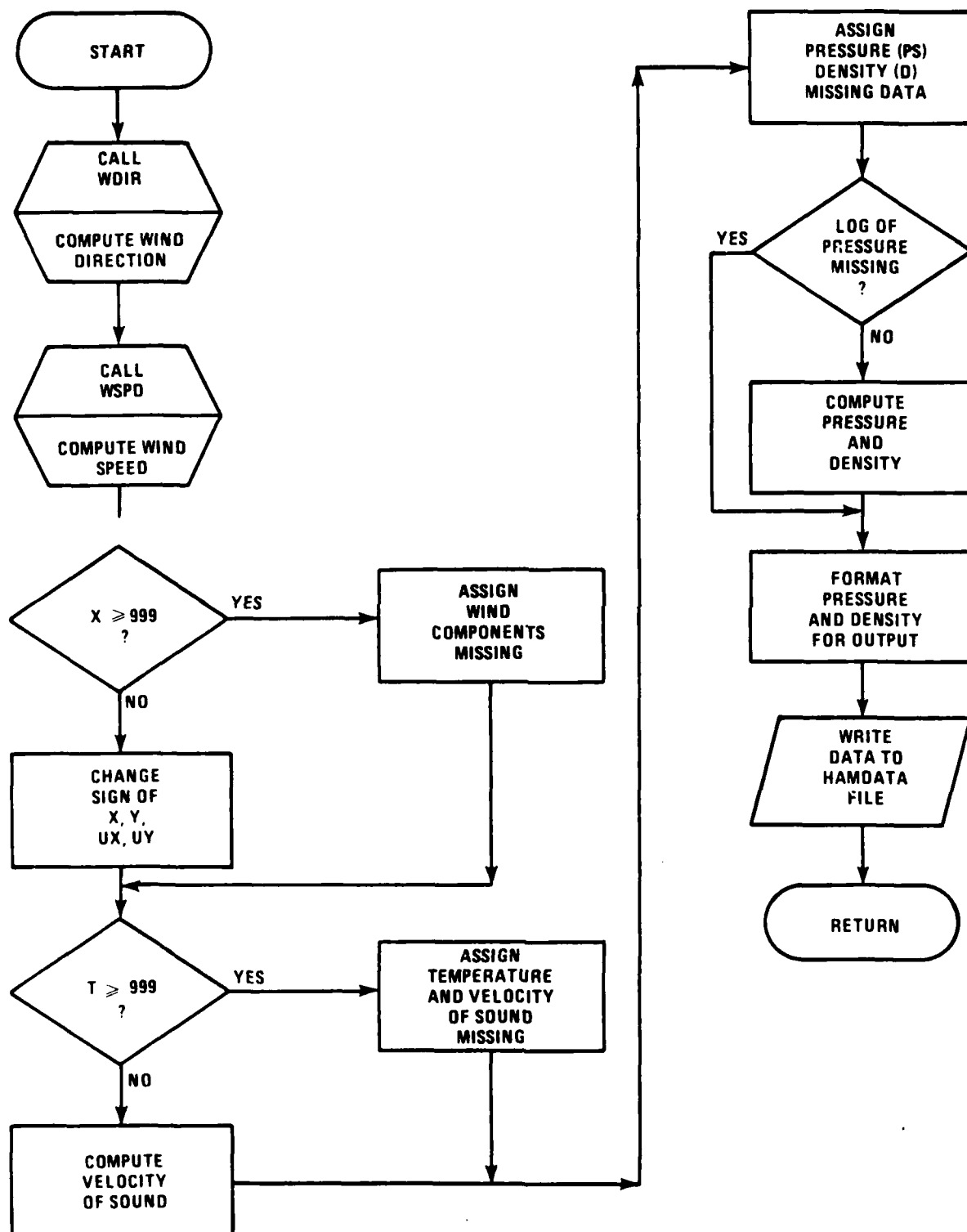
6.2.2 Subroutine ETFORM



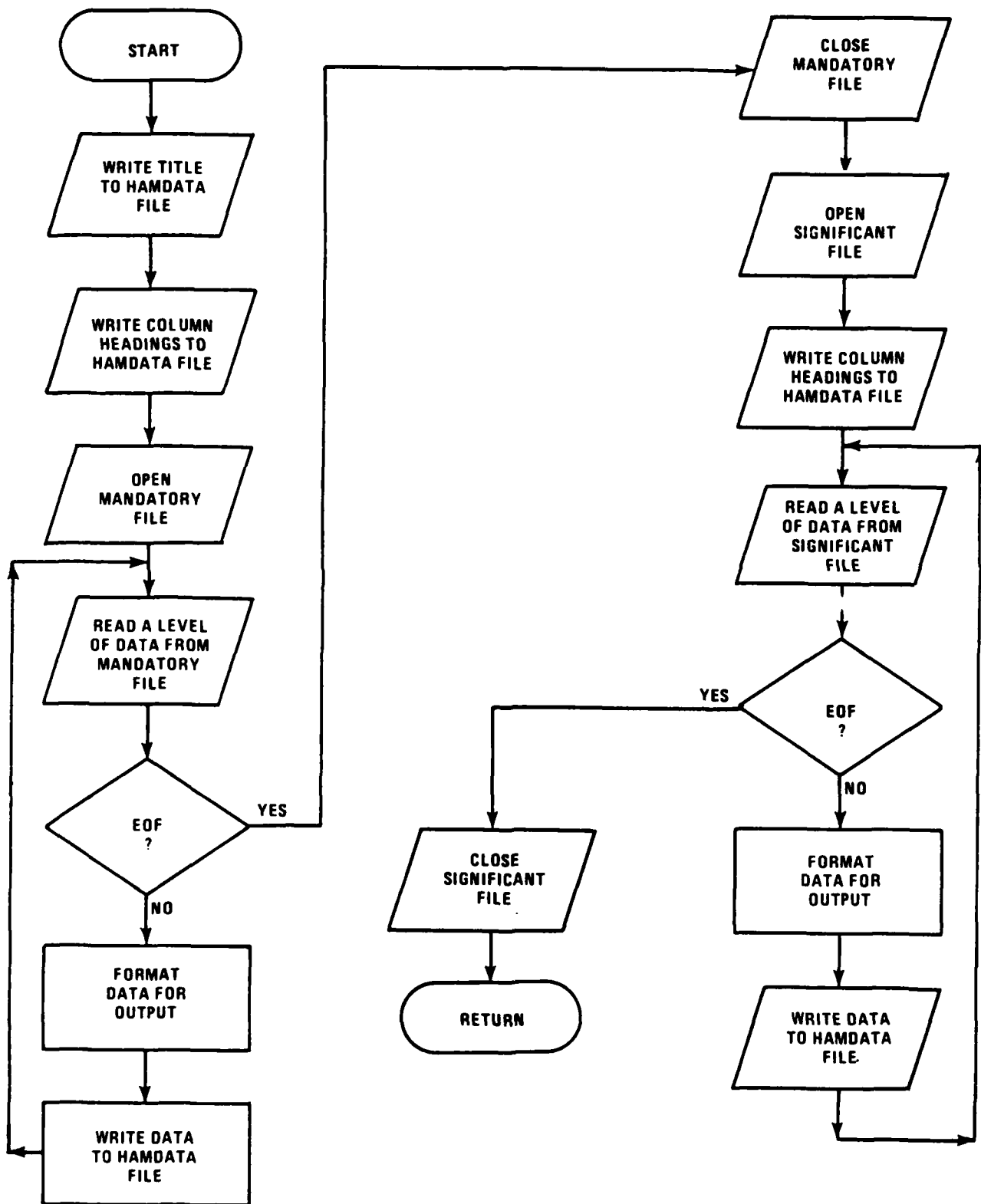
6.2.3 Subroutine ETFORM



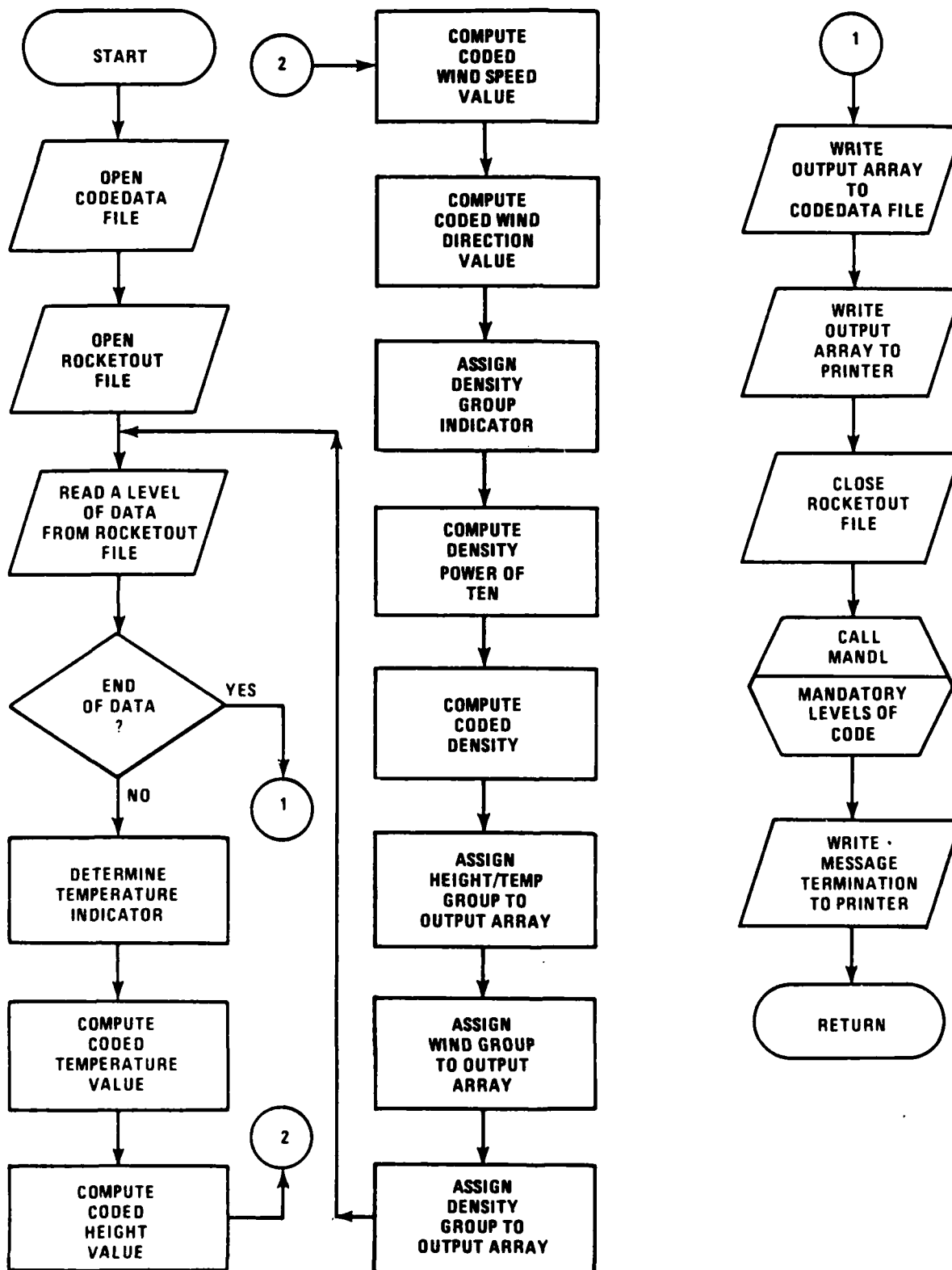
6.3 Subroutine CODIT



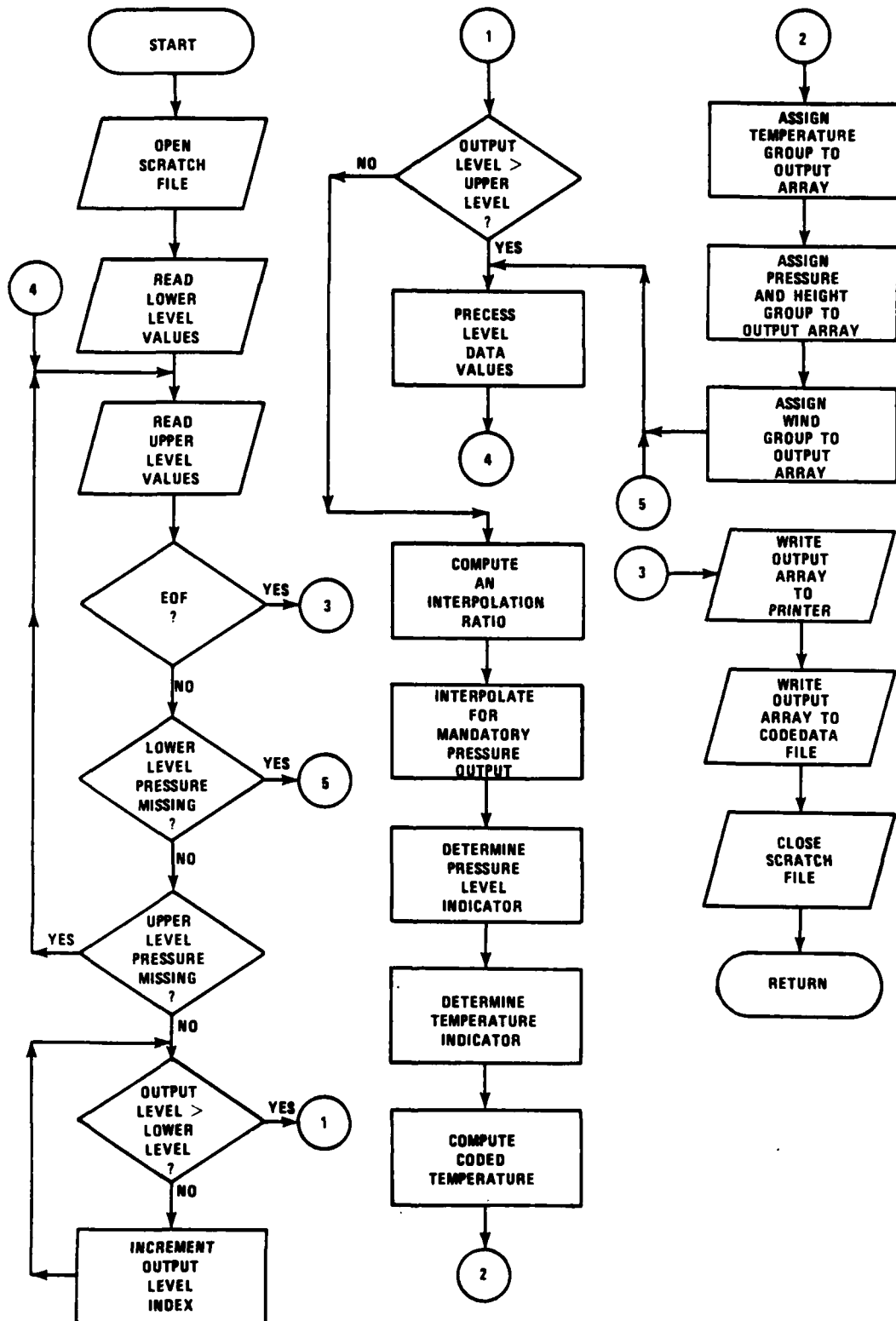
6.4 Subroutine RDRAWIN



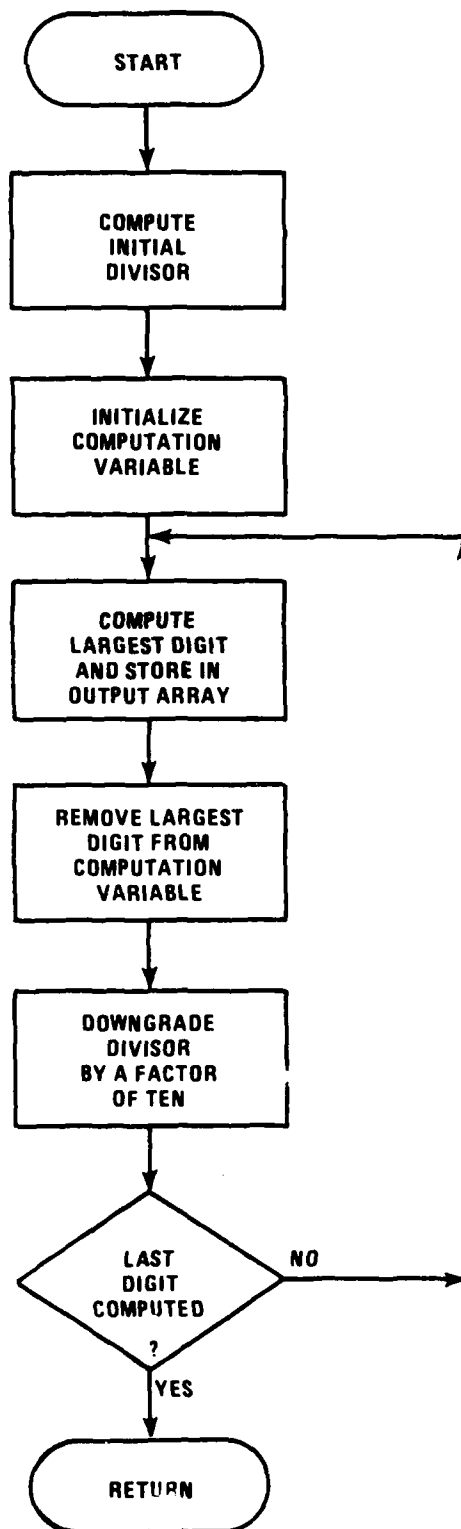
6.5 Subroutine ROCOB



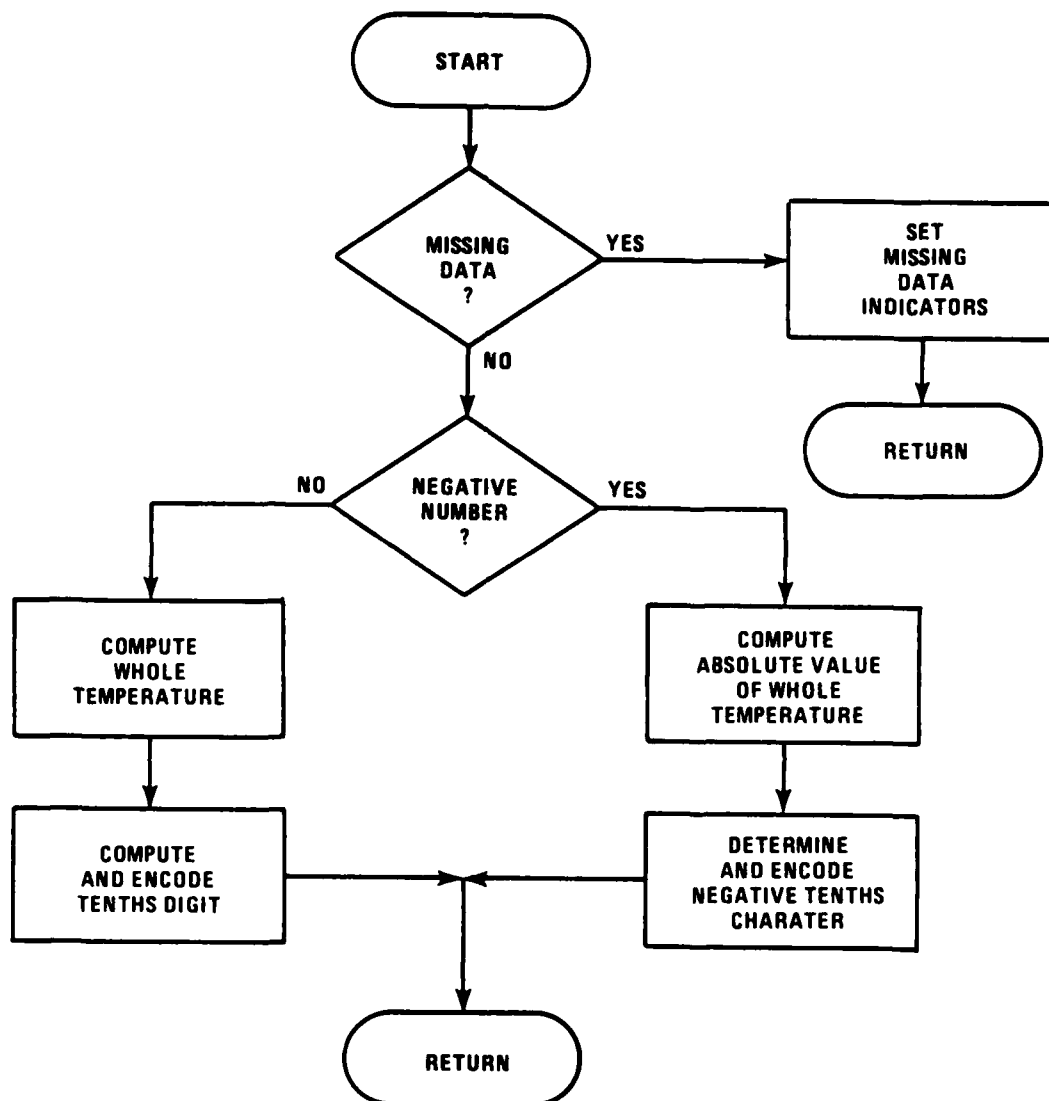
6.6 Subroutine MANDL



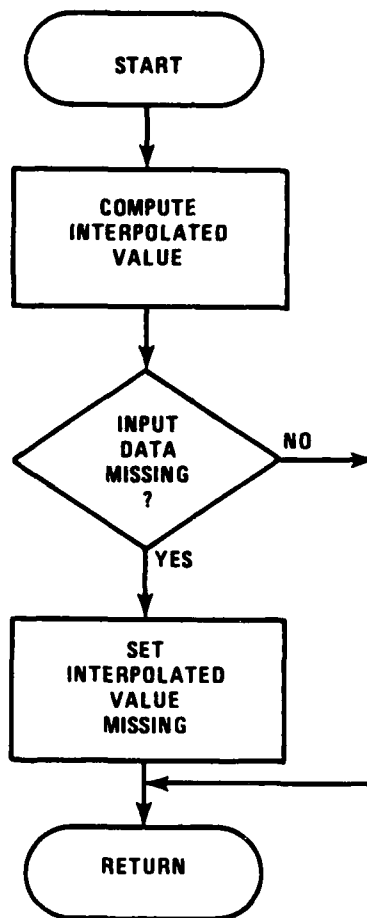
6.7 Subroutine LEFTZERO



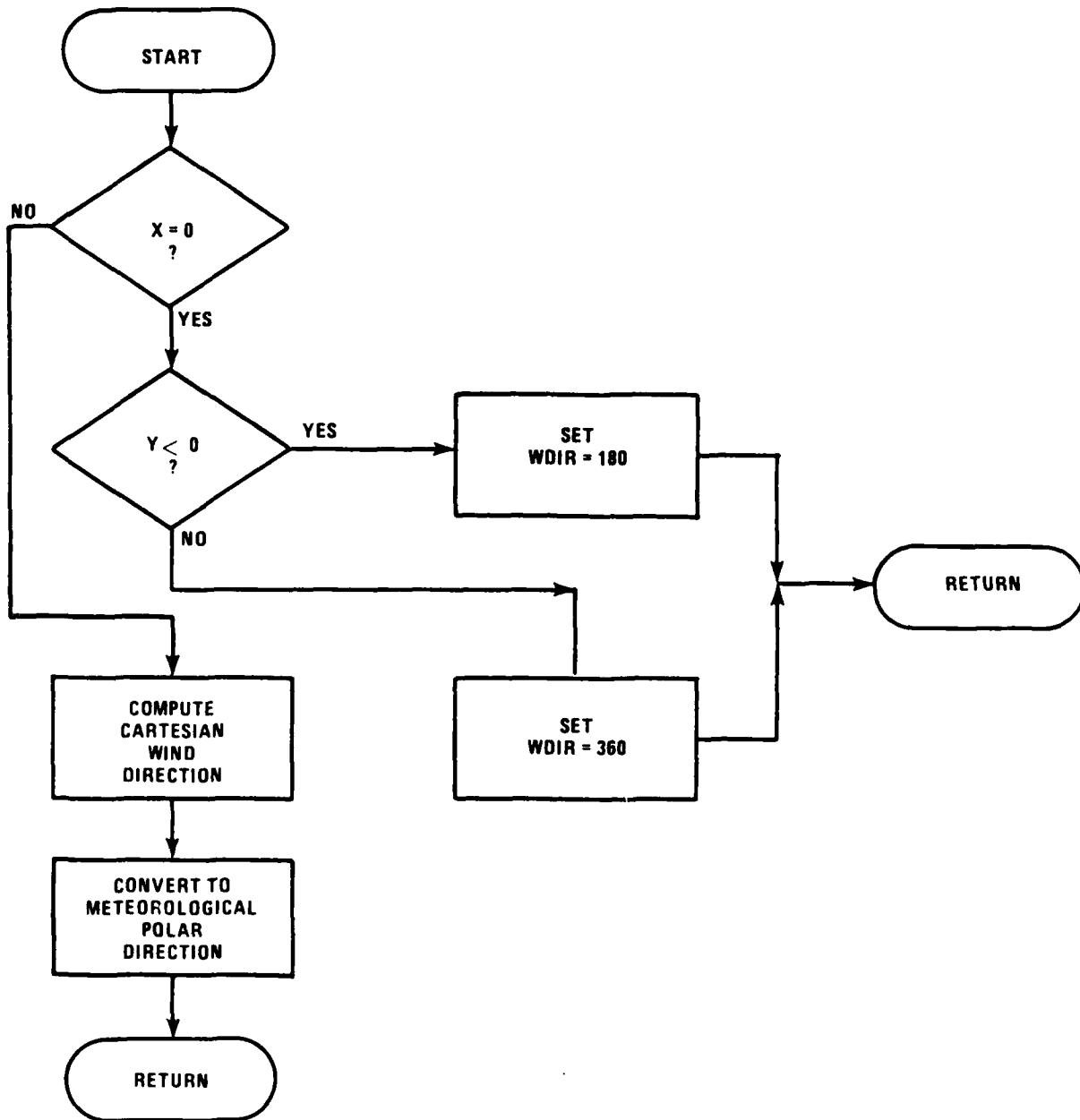
6.8 Subroutine TSIGN



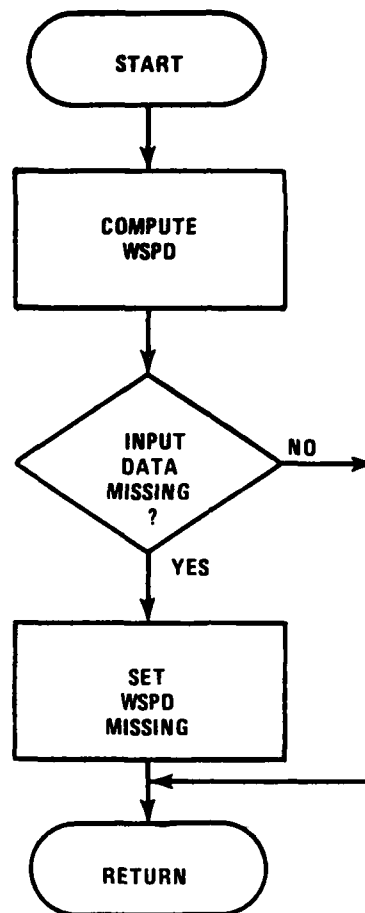
6.9 Function VALUE



6.10 Function WDIR



6.11 Function WSPD



7.0 MATHEMATICAL AND PHYSICAL CONSTANTS

7.1 Main Routine

Log of Mandatory Pressure Levels

LEVEL	50 MB	30 MB	20 MB	10 MB	7 MB
LOG	1.69897	1.47712	1.30102	1.0	0.84509
LEVEL	5 MB	3 MB	2 MB	1 MB	
LOG	0.69897	0.47712	0.30102	0.0	
LEVEL	0.7 MB	0.5 MB	0.4 MB	0.3 MB	
LOG	-0.15490	-0.30102	-0.39794	-0.52287	
LEVEL	0.2 MB	0.1 MB			
LOG	-0.69897	-1.0			
LEVEL	0.07 MB	0.05 MB	0.03 MB	0.02 MB	
LOG	-1.15490	-1.30102	-1.52287	-1.69897	
LEVEL	0.01 MB				
LOG	-2.0				
LEVEL	0.007 MB	0.005 MB	0.003 MB	0.002 MB	
LOG	-2.15490	-2.30102	-2.52287	-2.69897	
LEVEL	0.001 MB				
LOG	-3.0				
LEVEL	0.0007 MB	0.0005 MB	0.0003 MB	0.0002 MB	
LOG	-3.15490	-3.30102	-3.52287	-3.69897	
LEVEL	0.0001 MB				
LOG	-4.0				
LEVEL	0.00007 MB	0.00005 MB	0.00003 MB	0.00002 MB	
LOG	-4.15490	-4.30102	-4.52287	-4.69897	
LEVEL	0.00001 MB				
LOG	-5.0				

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7.2 Subroutine ETFORM

20000 Minimum output altitude, meters
273.15 Freezing point of water (degrees K)
1000 Mandatory output interval
100
10 Output formatting constants
0.5

7.3 Subroutine CODIT

331.45 Speed of sound at zero degree Celsius, meters/second
273.15 Freezing point of water (degrees K)
348.38 Gas constant for dry air with pressure in millibars and density in grams per cubic meter, combined with conversion factors
10000
1000
10 Output formatting constants
0.001
0.000009

7.4 Subroutine RDRAWIN

0.3048 Number of meters per foot
0.514792 Converts knots to per second
10
100 Output formatting constants

7.5 Subroutine ROCOB

60 Octal number used to convert numeric numbers to character numbers

7.6 Subroutine MANDL

10
0.5
0.05
0.005 Constants used to format output data
0.0005
0.00005
0.000005

7.7 Subroutine LEFTZERO

None

7.8 Subroutine TSIGN

None

7.9 Function VALUE

None

7.10 Function WDIR

90 True east, degrees

180 True south, degrees

270 True west, degrees

360 True north, degrees

57.29578 Degrees in a radian

7.11 Function WSPD

None

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ATTACHMENT 1

INTERMEDIATE SCRATCH FILE (FROM PASS 1)

PASS 2

B-187

IN UNIT	LOAD UNIT	LOAD UNIT	UN-CONNECTED	CONNECTED	IN-CONK	PERCENT	FEEL RATE
						ABS	FT/S
12497.42	10.71	3.27	-16.55	-8.07	197.1	999,900	-0.04
12499.82	-5.76	-0.13	-16.98	-5.99	197.3	999,900	-0.79
12506.25	5.07	2.67	15.13	3.50	197.7	999,900	-4.97
12461.07	-6.07	-13.58	-12.45	-3.11	197.5	999,900	-6.02
12460.56	9.78	3.79	-10.87	3.29	197.4	999,900	-3.93
12494.32	-7.51	-2.62	-6.94	-1.14	199.2	999,900	-1.66
12454.26	6.88	5.07	-5.07	-2.64	201.5	999,900	-1.00
12421.73	-7.50	-7.21	-6.11	-13.66	202.4	999,900	-4.83
20000.00	8.87	9.19	-12.39	12.39	202.2	1,742	-7.24
20002.80	-8.87	-9.19	-12.39	-12.39	202.2	1,742	-7.24
20000.87	10.52	10.09	-12.12	-5.62	203.3	1,731	-3.30
20058.64	10.59	-9.01	-11.60	-6.91	204.4	1,724	3.22
20003.50	10.59	-6.50	-10.46	-7.66	205.1	1,713	-6.43
20575.81	-9.06	-5.03	-8.23	-9.50	206.3	1,701	-5.08
20694.45	-8.05	-5.22	-8.03	-2.09	206.6	1,693	-2.83
20812.98	-8.33	-5.94	-7.64	-3.30	207.1	1,684	-5.07
20903.71	-9.77	-6.64	-9.20	-5.81	206.9	1,677	-1.11
20999.50	-11.53	-7.78	-11.43	-10.61	207.0	1,671	-5.14
21154.67	-13.20	-10.14	-14.67	-12.39	207.1	1,660	-5.19
21267.37	-14.93	-10.66	-15.67	-7.99	207.9	1,652	-2.32
21340.62	-16.37	-9.97	-14.76	-9.82	208.5	1,647	-2.56
21483.42	-17.19	-8.55	-16.64	-10.18	209.4	1,637	-6.96
21645.24	-16.91	-7.26	-18.12	-6.82	210.1	1,625	-3.83
21762.42	-16.18	-6.97	-17.86	-6.06	211.4	1,617	3.98
21842.35	-15.74	-6.28	-15.46	-5.81	211.3	1,604	-8.02
22071.20	-15.51	-5.37	-13.14	-5.22	211.3	1,596	-5.58
22166.02	-15.52	-5.23	-14.37	-6.69	211.4	1,589	-5.75
22346.61	-16.08	-4.44	-17.72	-4.59	211.4	1,576	-6.29
22422.50	-17.15	-3.05	-18.62	-3.58	211.2	1,567	-2.55
22589.21	-17.98	-1.62	-17.01	-3.06	212.3	1,560	-4.78
22741.97	-17.77	.43	-17.50	.34	213.1	1,549	-5.41
22869.64	-16.66	.94	-17.52	1.51	213.0	1,540	3.10
23000.34	-15.81	.19	-16.50	.74	212.9	1,531	-5.61
23179.65	-15.97	-1.25	-15.16	1.23	213.6	1,519	-6.34
23345.01	-16.45	-3.23	-14.72	-5.11	214.4	1,507	-4.68
23493.35	-17.38	-5.18	-17.31	-6.61	215.0	1,497	-5.21
23673.97	-18.71	-5.69	-20.41	-6.48	215.4	1,485	-6.83
23834.14	-19.61	-5.89	-20.08	-4.28	215.6	1,474	3.85
23981.50	-20.44	-3.94	-20.25	-5.20	216.4	1,464	-5.96
24152.46	-20.54	-2.50	-20.14	-1.37	216.9	1,452	-5.45
24311.77	-20.80	-1.68	-19.57	-3.57	217.2	1,442	-5.17
24499.73	-20.89	-2.53	-22.32	.70	217.3	1,439	-7.36
24694.94	-21.08	-4.04	-21.22	-3.63	217.2	1,416	-5.65
24870.14	-21.58	-5.61	-22.20	-5.90	217.3	1,404	-6.03
25013.83	-22.30	-6.88	-20.12	-9.99	218.0	1,394	-3.55
25161.65	-22.75	-7.54	-23.19	-7.79	218.6	1,383	-7.65
25420.55	-23.73	-6.72	-24.52	-4.94	219.2	1,367	-8.26
25684.62	-24.57	-6.28	-24.96	-7.06	219.9	1,349	-9.34
25881.54	-24.92	-5.87	-24.64	-4.05	220.4	1,336	-3.79
26022.61	-25.11	-6.29	-25.31	-7.33	220.4	1,327	-5.62

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26213.01	-25.18	-7.14	-24.95	-7.40	221.0	221.9	221.5	1.314	-7.08
26446.60	-25.17	-7.65	-23.97	-7.85	221.9	222.4	222.4	1.301	-5.64
26647.03	-25.20	-8.38	-27.46	-7.80	222.0	222.5	222.5	1.285	-10.57
26847.08	-25.44	-8.75	-24.72	-9.07	222.1	222.6	222.6	1.269	-5.70
27067.43	-26.11	-9.21	-25.21	-8.97	222.0	222.5	222.5	1.257	-6.06
27267.80	-27.29	-8.51	-27.04	-8.86	222.7	222.7	222.7	1.245	-6.21
27466.67	-28.40	-9.01	-28.58	-10.22	222.6	222.1	222.1	1.232	-6.80
27667.77	-29.63	-8.84	-30.00	-7.71	222.3	222.9	222.9	1.218	-7.94
27901.09	-30.48	-9.75	-31.54	-6.42	224.2	224.7	224.7	1.202	-7.62
28152.43	-30.43	-9.58	-30.72	-13.50	223.5	226.0	226.0	1.186	-9.44
28394.07	-30.77	-8.71	-29.13	-8.03	226.0	226.5	226.5	1.170	-6.16
28696.21	-30.83	-8.21	-31.47	-10.80	226.5	227.1	227.1	1.151	-13.78
28980.31	-31.54	-6.64	-30.32	-3.33	226.4	226.9	226.9	1.132	-5.15
29188.75	-32.56	-4.01	-33.86	-4.47	226.4	227.0	227.0	1.119	-8.75
29452.15	-32.78	-4.15	-32.03	-5.54	226.6	227.2	227.2	1.102	-8.81
29758.82	-32.32	-5.42	-34.32	-3.21	228.1	228.7	228.7	1.082	-11.63
30071.84	-31.32	-8.24	-31.34	-6.18	228.9	229.5	229.5	1.062	-9.22
30426.90	-30.41	-11.18	-28.85	-13.58	228.0	228.5	228.5	1.045	-7.80
30609.70	-30.43	-13.42	-30.36	-15.26	226.5	227.1	227.1	1.027	-11.06
30881.46	-31.45	-15.18	-29.03	-13.86	224.6	225.1	225.1	1.009	-7.06
31209.28	-30.95	-13.78	-33.87	-16.45	223.6	224.3	224.3	0.988	-14.79
31562.72	-31.80	-11.81	-33.03	-11.32	222.8	223.4	223.4	0.964	-9.11
31844.86	-31.54	-13.01	-33.11	-11.43	222.4	223.0	223.0	0.946	-9.37
32086.10	-31.38	-13.44	-24.13	-8.36	221.3	222.9	222.9	0.930	-6.72
32381.59	-30.91	-15.03	-36.02	-18.14	224.6	225.3	225.3	0.911	-12.98
32694.07	-30.14	-17.35	-29.09	-23.52	227.7	228.5	228.5	0.893	-15.52
33183.34	-29.81	-19.07	-31.29	-13.24	228.7	229.4	229.4	0.859	-9.44
33532.30	-30.32	-20.42	-30.33	-21.93	229.4	230.1	230.1	0.838	-12.48
33870.42	-29.42	-19.77	-26.44	-18.47	230.4	231.2	231.2	0.815	-11.38
34258.64	-30.86	-18.87	-31.52	-20.22	232.4	233.4	233.4	0.791	-14.50
34669.76	-31.48	-18.52	-32.65	-19.56	234.8	235.5	235.5	0.765	-12.91
35084.22	-34.34	-16.87	-34.90	-16.48	237.6	237.8	237.8	0.739	-15.39
35559.08	-37.24	-14.87	-35.29	-12.74	239.9	240.7	240.7	0.710	-15.60
36011.07	-38.91	-11.60	-37.42	-12.56	243.9	244.7	244.7	0.683	-14.66
36508.89	-40.28	-10.50	-44.40	-13.87	247.2	248.1	248.1	0.653	-18.39
36926.01	-39.65	-11.24	-38.97	-9.36	247.9	248.7	248.7	0.624	-14.08
37449.98	-37.54	-11.93	-38.26	-9.18	250.7	251.6	251.6	0.598	-16.18
38004.94	-34.06	-11.57	-34.17	-16.97	255.7	256.7	256.7	0.565	-20.82
38613.53	-29.93	-9.47	-27.66	-13.01	258.0	258.9	258.9	0.531	-19.76
39210.11	-24.02	-7.57	-26.95	-5.80	257.8	258.7	258.7	0.497	-20.02
39813.40	-26.95	-2.64	-26.06	-1.44	258.1	259.0	259.0	0.463	-20.20
40443.74	-25.59	1.26	-25.44	3.06	260.3	261.4	261.4	0.427	-21.82
41120.89	-23.63	0.85	-25.76	-0.01	264.1	265.2	265.2	0.389	-23.32
41808.04	-18.61	-2.88	-20.61	0.49	266.2	267.2	267.2	0.352	-22.49
42465.51	-9.75	-10.70	-9.98	-11.31	264.8	265.8	265.8	0.314	-22.68
43221.84	-1.44	-17.16	-3.90	-19.18	264.6	265.2	265.2	0.274	-26.41
44024.24	-1.09	-22.86	6.17	-25.54	265.6	266.9	266.9	0.229	-27.08
44834.61	-1.59	-28.06	7.68	-32.83	268.1	269.3	269.3	0.184	-28.28
45750.02	-2.69	-28.99	-12.94	-21.56	268.1	269.5	269.5	0.135	-31.41
46704.29	-2.33	-27.31	-11.50	-31.96	271.3	272.8	272.8	0.083	-33.27
47765.03	-1.57	-25.40	1.08	-30.22	274.3	275.7	275.7	0.027	-36.38
48829.67	1.70	-23.60	8.65	-14.06	269.8	271.3	271.3	-0.032	-37.22
50073.09	7.77	-24.86	9.49	-24.35	268.5	270.5	270.5	-0.098	-43.04
51412.18	9.33	-24.48	5.61	-26.02	271.5	273.7	273.7	-0.170	-46.23
52838.63	6.09	-24.79	5.89	-24.75	271.1	273.4	273.4	-0.246	-48.87
54417.78	4.33	-26.48	3.19	-25.61	269.9	272.7	272.7	-0.331	-56.41

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INTERMEDIATE SCRATCH FILE

14112: 9 29 MAR 1984

56177.57	-4.53	-17.64	-6.29	-15.57	267.0	270.0	-7.427	-60.91
56129.80	13.15	-5.03	-14.15	-5.25	238.0	262.0	-1.535	-69.24

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8	160	871E	4134	5051	0710	5999	444A	F06BUJ.K
10	4305	2415	4205	2415	433E	7E67	0381	2000	A...64\UR.Y.A..
18	444B	0910	4161	4027	0026	4F4F	BF90	8888	BE..RE..C..G...
20	415F	E199	4205	490A	4205	490A	0710	FR33	IN..SAOL'U UOR..3
28	010A	ER33	444B	604F	0151	270C	433E	7E67	A..6EL.MEI.C..6
30	010A	ER33	444B	604F	0151	270C	0129	E10R	QJ33IN'740'NATL
38	010A	ER33	444B	604F	0151	270C	4205	884E	AR...A7MUREBNEBN
40	434F	7167	014F	H38B	444C	0512	0161	2F59	C..64U..IDL...AA/Y
48	0109	514F	0107	2AAA	0131	02AC	4205	7911	AYODAG*AIR*REV.
50	4205	7911	433E	7E67	0160	4C44	444C	945R	REV.C..GA'LUDL.L
58	019C	708B	004A	9990	01A0	EEEE	4134	AE66	A.P.(QJ..A-NN4A.F
60	4205	60CE	4205	60CE	433E	7E67	013E	F08B	RENNRENC).GAP.
68	444C	EE53	0178	2981	0129	F053	016F	0888	DLMSAX)IA)PSAO..
70	0024	4272	4207	3849	4207	3849	433F	7E67	RS...RBBIRGICU.G
78	011A	A000	4440	1643	016E	170E	0150	4780	A..DM.CAN..AFGO
80	0151	2221	012A	3F77	4209	858E	4209	858E	AD...A*74RI..BI..
88	433E	7E67	00FF	A222	4440	6088	0178	00F3	C..G6...DMFAX.S
90	0123	670B	0161	000C	010A	9666	420A	6959	AS6.AALLAZ.FUJ.Y
98	420A	6959	433E	7E67	0140	5222	444E	2000	BUJYC).GAMR'DN.
100	0180	0B9B	0193	183F	019C	B333	0106	4666	A.L.A..7A.33AFF
108	420A	300C	420A	8419	411B	E115	0173	0111	BJ..8J4.A.A.ASQ.
110	444E	2221	0180	0R9B	0193	183F	019C	B333	DN'LA.C.A..7A.33
118	0106	4666	420A	3020	420A	8419	411B	E03F	ASQ.DNB'62+1A1./
120	0123	0111	444E	000E	0165	288B	0161	78AF	ASQ.DNB'62+1A1./
128	0101	F777	0159	ES00	420B	5617	420B	C9AC	ARW4YE)BKV.BKI.
130	411R	B145	0134	0AAA	444E	2263	014F	C485	A.1E64J8DQ'6A/ZI.
138	0190	1008	0189	9999	016E	9F77	420C	6E29	A...A9..AN.WBLN)
140	420C	0066	411B	945E	0133	9777	420C	B34C	RL'FA..43.WBLN)
148	0106	362C	0164	0138	01A7	6666	017A	A2AA	A6B.A001A'FFA..*
150	420C	1682	420C	8B71	411B	490R	0166	0100	BH..BH.GA.INAPM)
158	4450	5F00	0190	F730	0150	8989	0183	8888	GP.PA.W=AP..A..?
160	019H	0800	420C	E00E	420E	5309	411B	3733	A...BH'.BNS.A.73
168	0151	36EE	4450	D674	0180	0D62	0153	833E	AD0NDFOA.M8AS.)
170	0180	666A	0121	6111	420E	98EA	420E	08EE	A.FE64LA.RN.J8U.M
178	411R	1469	0120	5500	4451	4CFA	0185	546A	A...A-UJ0GL.A.TJ
180	015E	EDER	017A	388R	0134	H88B	420E	1409	A'.KA.1448.BU.Y
188	420E	848E	411A	F202	0151	1666	4451	A987	EO..A.A.AQ.F007
190	019C	5F15	016A	416F	0193	388R	015C	ER33	A...AJANA.11A.VK3
198	420E	EC91	420F	5703	411A	0703	0111	0555	BNC.BOWSA.W.A.UU
200	4452	027A	018B	858B	017C	7203	0186	0100	DR..AB.BA.VS6J1
208	0189	0444	420E	9448	420F	0483	411A	88A7	A)TURN.(SO..A..?
210	0152	5000	4452	624C	0183	2651	0162	51C7	ARF.DR'ASAGA'QG
218	01EA	0444	0106	32AA	420F	1045	420F	8611	AJ0DAF2*EO.ERO..
220	411A	BE7A	0153	1888	4453	135E	01EF	E798	A...AS..DS.'ANG.
228	01AA	9923	01FA	8888	017F	E388	420F	E883	AM..A..11A.C160H.
230	4200	5BAA	411A	4001	0125	1055	4453	SC9E	APL&A.MA42.UISN.
238	0210	50A6	019F	77EB	01EC	1999	0190	12AA	B.1&A.WAL..A..*
240	4200	7806	4200	ER06	411A	588E	0129	04CC	BPXURPK.A.X.A).L
248	4453	E868	0211	2F5F	0188	0776	0210	A333	DSKRB./A.GVB.#3
250	0162	13AA	4200	ESCR	4201	5E16	411A	2F55	A'B*RPENHQ'.A./U
258	016F	4CCC	4454	803E	0210	E92E	0174	1E2E	AOILLT.YB.I.AT..
260	0212	1E66	0160	1000	4202	0F83	4202	8589	R..FAM..RK..BK..
268	411A	000C	0130	5088	4455	026C	0210	2E6A	A..LA=P.UU.LB..J
270	016F	7703	0211	0055	0161	088B	4203	4464	AOA..A.JUAA..BSAD
278	4203	0728	4119	0F40	013F	ACCC	4455	8659	BSW+A..MA?LUU6Y
280	01FR	0905	0164	6C39	01F7	5000	015C	E888	A.IUAPL9AWJ1AVH.

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548	0224	0500	0212	2350	4250	5260	43E1	5415	B...R.#18...MBALV
550	4019	2009	0107	1844	4400	2912	0211	2340	(01940:AD...).R..4M
552	5507	5007	1834	0217	9200	4403	4403	840F	B.Z..B...DB...LBC.4
560	4214	7006	40F2	1508	01F8	4199	4404	9158	Roxf...4XA..U..X
568	0210	0050	0213	1108	021F	4404	0103	0333	B.PAB...R..JDA5C3
570	4214	8908	4215	6400	400R	1100	0196	1777	809..R..JL01N..A..V
578	4402	0040	021E	40A7	0214	5050	021E	540A	O..M..B..JTB..L..G..T4
580	0215	1916	42F5	4100	4216	5993	4006	88R7	R..V..HE..R..Y..00.7
588	0107	004A	4484	4050	0210	6408	0213	0631	AGJ..D..N..R..R..B..F1
590	0216	0180	0212	7891	42K6	619F	4217	2746	B..O..R..X..R..N..R..F
598	4000	8452	0186	1555	4485	02A3	021E	06E0	8P4A6..UD..R..B..L..M
600	0212	0E51	021F	8555	0214	3899	42E8	9370	R..R..R..R..B..B..B..
608	42E9	6056	40CA	6AF5	01E8	0333	4487	6003	Bt..V..J..J..H..30..MC
610	42E1	742E	0212	8629	0210	006E	0213	9099	B...R...J..R..Z..H...V
618	42E8	036F	42E8	8A33	40C3	0208	0100	8500	B..C..7..B..J..C..R..AN..1
620	4482	1630	0222	550B	0210	0E14	0222	E444	U..UB'..ULB...R..F..D
628	0210	3B33	448A	E715	0225	30E7	01E0	12FD	B...R..R..B..B..B..B..
630	01F6	448A	0210	0140	42E0	082E	0226	E91D	B..F..R..B..B..B..B..
638	42F7	3E0A	42F8	1AE1	40A7	29AF	0212	E0EF	AV130..G..R..G..G..M..L..O
640	4490	8403	0227	ASFS	01B3	0687	0226	B8AE	B..J..AK..T..B..B..B..
648	0155	8992	42F2	DF38	42F8	490C	409F	E91D	85CHAV..N..R..R..B..
650	01E1	5800	4492	49FC	0225	8999	01BE	0EC2	A9..B..L..A..I..N..B..S..B
658	0226	4200	0192	EB8E	42E4	4892	42E8	9CE4	Rt..V..B..J..J..J..D..B
660	0189	0030	0210	2E44	4494	74F0	0222	0E8A	B..W..B...DD..TP..B...4
668	4310	0843	0090	019A	0214	00F7	4496	B7DE	A9..B..B..B..B..B..B..
670	4076	779B	0214	3433	4490	F8E1	0219	D588	C..C..C..A..B..B..B..D..U
678	4114	1A68	0219	7177	4130	F666	4310	1A22	B..L..A...=B..(..A..P..)
680	4310	559F	406H	0020	0240	40B7	0213	01AA	C..C..C..B..B..B..B..A..*
688	0217	4239	406B	0020	0215	0168	4490	F450	D..B..B...X..X..X..X..X..X..
690	4310	827E	4310	9366	4063	8373	0217	380B	ANC..C..C..C..C..C..C..
698	44A3	500A	0212	9000	01E2	25C1	0214	29F4	R..N..D..F..R..R..J..A..T
700	4070	9111	4310	4310	4310	F3B2	0198	50A2	B..U..A...3C..1VC..0..
708	0216	7C2A	44A5	0020	0210	0198	0218	96DC	8V..R..43H...B...N
710	019F	R26A	0194	020A	4310	0E10	4310	44FC	A..H..B..B..B..B..B..B..
718	4050	7620	0216	40F7	44A8	05E3	0135	60E5	C..U..B..B..B..B..B..B..
720	0211	2967	015E	6197	0213	2E11	4310	792B	GPV..B..B..B..B..B..B..
728	4310	9280	0046	00E1	021A	4988	44A8	8065	R..J..B..A..R...C...E
730	0111	830C	0216	00A0	4162	46E1	0219	F830	C...B..A..B..I..D..X..E
738	4310	9A5B	4310	0E48	403A	07F5	0218	89A6	A...C..R..L..B..B..B..B..A
740	4401	367E	0119	7425	0210	0F23	417A	13FE	C..X..C..R..B..7..S..B..N
748	0220	039C	4310	0109	4310	04A2	402F	1055	J..D..A..X..B...B..B..B..
750	0210	470A	44N2	8605	012H	0441	0210	163E	B..S..C..A..C..F..(..P..)
758	010F	0000	0215	8F0A	4310	01CF	4310	FDJD	B..B..B..B..B..B..B..B..
760	4022	9A0H	021F	6A11	44B6	804R	0125	D7DA	AD...B...C..A..C..A..C..W..
768	4022	9A0H	021F	6A11	44B6	804R	0125	34DE	B...R..J..D..B..N..A..Z..A

708	0218	4E48	U187	1800	C21F	F530	4310	F437	B.NNA/x.B.00C.T/
716	4311	0059	4055	2974	C271	4540	448A	9508	C..YB.)RIELH..
718	0119	5110	C219	5684	4111	4199	C21E	3708	A..I.B.F40.A.B.7X
720	4311	4400	4311	3874	3F6B	8C93	C274	6000	C..B.C..5A7AC.H931
728	4400	5013	4118	5302	C217	9A14	418A	7500	D.E.A..5.B...A.OJ
730	0111	0708	4310	0070	4310	F519	8F84	8107	AO.HC..3PC.U.7.16
738	0225	5980	4453	9918	417C	5877	C21B	0036	629.0C..A.CWB.16
740	4197	0611	0718	5896	4310	C7E6	4310	EB53	A.VNR.X.C.C.F.C.WS
748	0018	FCF5	C228	0811	4408	D42F	4195	4A2A	B..VB...0HT/A..JH
750	C21B	7424	4159	0166	C214	062C	4310	F784	R..RAYNFB..C.W.
758	4311	1A0F	C028	7E07	C22E	3A88	44CE	66A1	C..B...B..7DNF1
760	4161	7092	C21B	C818	415E	440C	C21B	C064	AA.P.R.H.A..ILR.0n
768	4310	F113	4311	1590	C03F	1A0A	C230	00F7	C..C...B?...B01w
770	4404	9107	4145	5821	C21A	7A34	4133	040C	HT.DAEIAB..4A3.L
778	C219	9012	4310	0E85	4311	0A82	C054	0C0F	B..C..C..20CN
780	C238	680C	440B	7193	C148	840D	C211	4271	BH.LILa.AH.HH.7a
788	U164	AAAA	C1F9	1FAA	4310	AFB1	4310	DF97	AD**AV..AC./IC..
790	C060	4901	C23C	E911	44E3	110E	C102	6Br5	0M1.HCI.DC.NARKU
798	C150	8097	C1E2	6AAA	C153	F6F7	4310	201B	AP..ABJ*ASVWC..
780	4310	5f BQ	C08B	F970	C245	3NGB	---	---	C..0B.VPBE=.....

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ATTACHMENT 2
OUTPUT DISK FILE (FROM PASS 1)

PASS 2

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U.S. ROUTE 600
LAKE PANACHE AFN FORTUNA
0507-00 JAN 98

[illegible]

MAXIMUM ALLOWED 61559

TEST NUMBER 0000
CAPE CANAVERAL AFS, FLORIDA
1915Z 18 JAN 1984

3:12:19 29 MAR 1984

FILED IN

3914

SUPER LOGI RUN LOG

ALT GEOD	DIR DEG	SFD MFS	TEMP K	TEMP C	PRESS MBS	DENSITY G/M3	RI MFS	VS MFS	SHR /SEC
20000	224	13	202.24	-4.6	999.999	999.999	7.24	285.20	.999
20250	230	14	204.33	-4.5	53.0055	90.3721	3.23	286.67	.008
20500	246	11	205.53	-4.6	50.8632	86.2151	5.67	287.51	.015
20750	236	10	206.82	-4.4	48.8150	82.2270	3.88	288.42	.006
21000	234	14	206.58	-4.4	46.8581	78.0216	5.14	288.23	.016
21250	234	18	207.78	-4.5	44.9806	75.4187	2.76	289.08	.017
21500	244	19	209.02	-4.7	43.1908	71.9885	6.64	289.94	.013
21750	247	18	211.25	-4.5	41.4843	68.4129	3.96	291.49	.007
22000	249	17	211.30	-4.5	39.8551	65.7097	4.69	291.52	.005
22250	253	17	211.40	-4.6	38.2906	63.1007	6.00	291.59	.004
22500	261	18	211.98	-4.5	36.2871	60.4611	2.97	291.93	.010
22750	272	18	212.68	-4.6	35.3516	57.9083	5.27	292.47	.013
23000	271	16	212.92	-4.7	33.9738	55.5876	5.61	292.64	.008
23250	263	16	213.94	-4.8	32.6534	53.1739	5.64	293.33	.009
23500	253	18	215.04	-4.7	31.3901	50.8551	5.27	294.02	.013
23750	253	20	215.50	-4.7	30.1807	48.7912	5.42	294.40	.007
24000	260	21	216.46	-4.8	29.0207	46.7066	5.90	295.06	.010
24250	264	21	217.10	-4.8	27.9103	44.7862	5.28	295.49	.007
24500	263	21	217.25	-4.9	26.8442	43.0420	7.36	295.60	.002
24750	258	22	217.23	-4.8	25.8191	41.4074	5.77	295.58	.008
25000	253	23	217.93	-5.0	24.8342	39.7002	3.79	296.06	.010
25250	252	24	218.80	-5.2	23.8911	38.0410	7.82	296.64	.004
25500	254	25	219.41	-5.2	22.9868	36.4983	8.59	297.06	.005
25750	256	25	219.91	-5.1	22.1187	35.0402	7.50	297.40	.004
26000	256	26	219.90	-5.1	21.2844	33.7199	5.32	297.39	.002
26250	254	26	221.15	-5.3	20.4840	32.2684	6.80	298.24	.004
26500	252	26	221.91	-5.3	19.7173	30.9546	7.59	298.25	.003
26750	251	27	222.06	-5.3	18.9807	29.7784	8.52	298.85	.002
27000	251	27	222.04	-5.1	18.2718	28.6684	5.92	298.84	.003
27250	253	29	221.71	-5.2	17.5890	27.6380	6.21	298.61	.006
27500	253	30	221.78	-5.4	16.9313	26.5959	7.07	298.66	.006
27750	253	31	222.97	-5.6	16.3000	25.4677	7.83	299.46	.005
28000	252	32	224.66	-5.7	15.6362	24.3400	8.32	300.59	.003
28250	253	32	225.66	-5.7	15.1182	23.3394	8.23	301.27	.002
28500	255	32	226.16	-5.7	14.5633	22.4331	8.94	301.60	.003
28750	256	32	226.47	-5.9	14.0297	21.5823	12.15	301.80	.003
29000	259	32	226.37	-5.3	13.5159	20.8008	5.49	301.74	.007
29250	263	33	226.44	-5.8	13.0210	20.0326	8.76	301.78	.010
29500	262	33	226.85	-6.0	12.5448	19.2657	9.25	302.05	.001
29750	261	33	228.03	-6.2	12.0873	18.4670	11.55	302.84	.004
30000	256	32	228.74	-6.0	11.6488	17.7414	9.77	303.31	.009
30250	251	32	228.28	-5.7	11.2261	17.1325	8.23	303.00	.011
30500	248	33	227.10	-5.7	10.8174	16.5943	9.29	302.22	.009
30750	245	34	225.53	-5.6	10.4213	16.0978	8.99	301.18	.007
31000	245	35	224.24	-5.2	10.0374	15.5944	9.86	300.31	.002
31250	246	34	223.52	-6.6	9.6661	15.0859	14.15	299.83	.005
31500	247	34	222.26	-6.2	9.3074	14.5432	10.18	299.45	.006
31750	248	34	222.54	-6.2	8.9614	14.0289	9.28	299.17	.002
32000	247	34	222.31	-6.5	8.6778	13.5207	7.66	299.02	.003
32250	245	34	223.54	-7.2	8.3075	12.9470	10.19	299.84	.004
32500	245	34	225.44	-7.6	8.0014	12.3648	13.68	301.12	.006

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32750	241	35	227.27	-76	7.7084	11.8159	15.17	302.34	.006
33000	249	35	228.23	-73	7.4286	11.3487	12.41	302.97	.005
33250	237	36	228.91	-70	7.1588	10.8951	10.06	303.42	.004
33500	236	36	229.46	-72	6.9061	10.4699	12.38	303.88	.004
33750	236	36	230.16	-72	6.6517	10.0681	11.75	304.25	.003
34000	237	36	231.15	-75	6.4140	9.6655	12.42	304.90	.002
34250	239	36	232.53	-80	6.1836	9.2644	14.43	305.81	.004
34500	249	46	233.86	-79	5.9644	8.8851	13.57	306.69	.002
34750	240	37	235.19	-79	5.7536	8.5227	13.38	307.56	.004
35000	241	38	236.51	-81	5.5516	8.1726	14.84	308.42	.008
35250	245	39	237.96	-85	5.3580	7.8442	15.46	309.37	.008
35500	248	40	239.50	-86	5.1719	7.5231	15.57	310.36	.008
35750	250	40	241.55	-86	4.9942	7.2030	17.21	311.69	.008
36000	253	41	243.75	-87	4.8231	6.8933	14.69	313.11	.008
36250	254	41	245.48	-86	4.6603	6.6137	16.45	314.22	.004
36500	255	42	247.19	-86	4.5011	6.3466	18.32	315.30	.004
36750	255	41	247.56	-82	4.3524	6.1250	16.26	315.54	.002
37000	254	41	247.90	-79	4.2067	5.9119	14.10	315.76	.002
37250	253	40	249.44	-86	4.0669	5.6801	15.26	316.74	.005
37500	252	39	251.11	-92	3.9322	5.4550	16.60	317.81	.005
37750	252	38	253.40	-95	3.8035	5.2292	18.69	319.24	.006
38000	251	36	255.67	-92	3.6791	5.0131	20.78	320.67	.006
38250	252	34	256.65	-94	3.5604	4.8330	20.39	321.28	.008
38500	252	32	257.59	-89	3.4455	4.6599	19.95	321.87	.008
38750	253	31	257.98	-87	3.3347	4.5031	19.82	322.12	.006
39000	254	30	257.91	-87	3.2276	4.3598	19.92	322.67	.004
39250	255	29	257.86	-88	3.1239	4.2205	20.03	322.94	.005
39500	259	28	257.98	-88	3.0236	4.0832	20.11	322.11	.008
39750	263	27	258.09	-91	2.9266	3.9503	20.18	322.19	.008
40000	267	27	258.77	-95	2.8329	3.8160	20.68	322.61	.007
40250	270	26	259.64	-100	2.7424	3.6798	21.32	323.15	.007
40500	273	25	260.63	-104	2.6550	3.5490	21.94	323.76	.005
40750	272	25	262.04	-106	2.5712	3.4184	22.50	324.64	.003
41000	272	24	263.45	-102	2.4906	3.2927	23.06	325.51	.003
41250	270	23	264.53	-105	2.4118	3.1763	23.17	326.18	.006
41500	262	21	265.22	-101	2.3365	3.0682	22.86	326.45	.002
41750	262	19	266.06	-96	2.2635	2.9639	22.56	327.12	.009
42000	252	17	265.83	-95	2.1929	2.8739	22.54	326.98	.016
42250	238	15	265.31	-95	2.1245	2.7897	22.61	326.66	.017
42500	222	14	264.80	-95	2.0583	2.7029	22.75	326.35	.012
42750	210	15	264.53	-102	1.9938	2.6258	24.02	326.18	.012
43000	199	16	264.26	-108	1.9314	2.5462	25.29	326.01	.012
43250	191	18	264.08	-114	1.8710	2.4682	26.44	325.90	.012
43500	188	19	264.59	-117	1.8125	2.3865	26.64	326.21	.008
43750	185	21	265.09	-121	1.7559	2.3075	26.85	326.52	.008
44000	183	23	265.60	-124	1.7016	2.2312	27.06	326.84	.008
44250	183	25	266.30	-124	1.6482	2.1562	27.40	327.27	.007
44500	183	26	267.03	-123	1.5971	2.0837	27.77	327.72	.007
44750	183	28	267.76	-123	1.5476	2.0136	28.13	328.16	.007
45000	183	29	268.07	-125	1.4997	1.9490	28.79	328.36	.003
45250	184	29	268.09	-129	1.4535	1.8888	29.66	328.36	.001
45500	185	29	268.10	-133	1.4086	1.8304	30.54	328.37	.001
45750	185	29	268.11	-137	1.3651	1.7738	31.41	328.38	.001
46000	185	29	268.92	-141	1.3233	1.7142	31.89	328.88	.002
46250	185	28	269.74	-144	1.2827	1.6567	32.37	329.37	.002
46500	185	28	270.55	-148	1.2433	1.6010	32.85	329.87	.002

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46750	185	27	271.35	-1.51	1.2053	1.5474	33.36	330.36	.002
47000	185	27	272.04	-1.49	1.1687	1.4966	34.10	330.79	.002
47250	184	26	272.78	-1.48	1.1333	1.4474	34.85	331.22	.002
47500	184	26	273.49	-1.46	1.0982	1.3984	35.59	331.66	.002
47750	184	25	274.21	-1.45	1.0656	1.3538	36.33	332.09	.002
48000	182	25	275.31	-1.45	1.0332	1.3170	36.56	331.55	.003
48250	180	25	272.31	-1.46	1.0018	1.2817	36.75	330.94	.003
48500	179	24	271.41	-1.47	.9714	1.2473	36.94	330.33	.003
48750	177	24	270.32	-1.48	.9419	1.2139	37.13	329.73	.003
49000	174	24	269.69	-1.54	.9131	1.1795	37.86	328.35	.004
49250	171	24	269.41	-1.65	.8851	1.1445	39.07	329.18	.005
49500	169	23	269.13	-1.77	.8579	1.1105	40.27	329.00	.005
49750	166	25	268.85	-1.88	.8316	1.0775	41.48	328.83	.005
50000	163	26	268.58	-1.94	.8060	1.0455	42.69	328.66	.005
50250	162	26	268.69	-2.05	.7813	1.0123	43.46	328.65	.002
50500	162	26	269.44	-2.08	.7574	.9793	44.06	329.19	.001
50750	161	26	270.00	-2.12	.7343	.9474	44.65	329.53	.001
51000	160	26	270.55	-2.15	.7118	.9166	45.25	329.87	.001
51250	160	26	271.11	-2.19	.6900	.8867	45.84	330.21	.001
51500	160	26	271.44	-2.21	.6689	.8585	46.39	330.41	.000
51750	161	26	271.37	-2.23	.6486	.8326	46.85	330.37	.002
52000	162	26	271.30	-2.24	.6288	.8075	47.32	330.33	.002
52250	163	26	271.23	-2.25	.6097	.7831	47.78	330.28	.002
52500	164	26	271.16	-2.27	.5911	.7595	48.24	330.24	.002
52750	166	26	271.09	-2.28	.5731	.7366	48.70	330.20	.002
53000	167	26	270.95	-2.33	.5557	.7145	49.64	330.11	.002
53250	167	26	270.76	-2.41	.5387	.6931	50.83	330.00	.002
53500	168	26	270.58	-2.48	.5223	.6725	52.03	329.89	.002
53750	169	26	270.40	-2.56	.5063	.6524	53.22	329.78	.002
54000	170	26	270.21	-2.63	.4909	.6329	54.41	329.66	.002
54250	170	27	270.03	-2.71	.4759	.6140	55.61	329.55	.002
54500	171	26	269.77	-2.77	.4614	.5958	56.62	329.39	.003
54750	174	25	269.35	-2.80	.4472	.5784	57.26	329.14	.007
55000	177	24	268.94	-2.84	.4335	.5615	57.90	328.89	.007
55250	180	22	268.52	-2.87	.4201	.5451	58.54	328.63	.007
55500	183	21	268.11	-2.90	.4072	.5292	59.18	328.38	.007
55750	187	20	267.69	-2.94	.3947	.5137	59.82	328.12	.007
56000	191	19	267.28	-2.97	.3826	.4987	60.46	327.87	.007
56250	196	18	266.65	-3.03	.3708	.4844	61.22	327.48	.007
56500	201	17	265.50	-3.16	.3591	.4712	62.29	326.77	.008
56750	207	16	264.35	-3.28	.3478	.4584	63.35	326.07	.008
57000	214	15	263.20	-3.41	.3369	.4460	64.42	325.36	.008
57250	221	14	262.05	-3.53	.3264	.4339	65.49	324.65	.008
57500	227	14	260.90	-3.66	.3161	.4221	66.55	323.93	.008
57750	237	14	259.75	-3.78	.3062	.4107	67.62	323.22	.008
58000	245	14	258.60	-3.91	.2964	.3995	68.68	322.50	.008
58129	249	14	258.01	-3.97	.2917	.3939	69.24	322.13	.008

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MAXIMUM ALTITUDE 61559

TEST NUMBER 0000
CAPE CANAVERAL AFS, FLORIDA
1515Z 18 JAN 1984

SUPER LOKI FVN-10D

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ALT	DIR	SPD	TEMP	TEMP	TEMP	PRESS	DENSITY	RF	VS	SHK
TIME	IN	KTS	A	GRN	MRG	MRG	G/M3	N18	N18	/SEC
64000	255	37	203.03	-46	54.1967	42.9960	14.42	555.10	.999	
67000	259	33	205.17	-46	51.5745	37.4883	20.61	558.02	.012	
68000	236	19	206.73	-44	49.0046	32.5830	11.28	560.14	.007	
69000	235	28	206.68	-44	46.6190	28.5813	16.91	560.07	.015	
70000	238	37	208.44	-45	44.3550	24.1346	8.36	562.45	.016	
71000	247	36	210.63	-46	42.2184	20.0286	12.85	564.59	.009	
72000	248	33	211.29	-46	40.2037	16.2887	25.62	566.28	.005	
73000	253	32	211.40	-46	38.3878	13.0961	19.69	566.43	.005	
74000	263	35	212.16	-46	36.4660	9.8804	13.41	567.44	.011	
75000	273	33	212.96	-45	34.7381	56.8271	10.74	568.52	.010	
76000	266	31	213.52	-48	33.0963	53.9993	20.60	569.27	.007	
77000	254	35	214.92	-47	31.5406	51.1254	16.81	571.13	.013	
78000	253	39	215.52	-47	30.0649	48.5928	16.28	571.52	.002	
79000	261	40	216.70	-48	28.6637	46.0815	18.60	573.49	.010	
80000	265	41	217.23	-48	27.3334	43.8364	19.73	574.18	.004	
81000	259	42	217.18	-48	26.0661	41.8120	18.72	574.13	.007	
82000	253	45	217.90	-50	24.8587	39.7446	12.79	575.02	.010	
83000	253	47	218.91	-52	23.7130	37.7380	26.08	576.40	.004	
84000	255	49	219.70	-52	22.6240	35.8254	29.56	577.44	.004	
85000	257	50	219.89	-49	21.5875	34.2022	13.55	577.69	.003	
86000	254	51	220.58	-53	20.6005	32.4768	23.21	579.13	.004	
87000	252	51	221.92	-53	19.6643	30.8699	26.08	580.35	.003	
88000	251	52	222.10	-51	18.7724	29.4464	23.19	580.58	.002	
89000	251	54	221.89	-52	17.9210	28.1366	20.04	580.32	.004	
90000	252	58	221.62	-53	17.1074	26.8927	22.17	579.94	.004	
91000	253	61	222.87	-56	16.3324	25.5302	25.73	581.59	.005	
92000	252	62	224.87	-57	15.5582	24.1654	28.28	584.20	.003	
93000	254	62	225.88	-56	14.9014	22.9826	22.90	585.51	.003	
94000	255	62	226.41	-60	14.2379	21.9077	41.59	586.20	.002	
95000	258	63	226.38	-54	13.6048	20.9369	19.31	586.15	.005	
96000	263	64	226.45	-58	12.9929	19.9924	28.74	586.25	.010	
97000	262	64	227.16	-60	12.4230	19.0525	32.33	587.16	.002	
98000	259	63	228.38	-61	11.8739	18.1130	35.34	588.74	.004	
99000	253	63	228.56	-58	11.3508	17.3017	28.36	588.97	.010	
100000	248	64	227.20	-57	10.8495	16.6360	31.37	587.22	.010	
101000	245	67	225.28	-56	10.3670	16.0317	27.82	584.73	.007	
102000	245	67	223.97	-63	9.9027	15.4037	39.28	583.02	.001	
103000	248	66	223.19	-64	9.4572	14.7616	38.90	582.02	.005	
104000	249	66	222.61	-62	9.0306	14.1325	30.29	581.26	.002	
105000	247	66	222.31	-65	8.6225	13.5125	24.99	580.86	.003	
106000	245	67	224.00	-74	8.2340	12.8059	37.54	583.07	.005	
107000	242	67	226.27	-76	7.8668	12.1120	47.11	586.02	.006	
108000	239	68	228.00	-74	7.5181	11.4823	45.02	588.25	.005	
109000	237	69	228.83	-70	7.1870	10.9416	32.17	589.33	.005	
110000	236	71	229.67	-72	6.8717	10.4236	40.83	590.40	.004	
111000	236	69	230.35	-72	6.5713	9.9385	37.72	591.27	.003	
112000	238	70	231.81	-78	6.2856	9.4425	44.38	593.27	.004	
113000	239	71	233.55	-79	6.0141	8.9709	45.24	595.37	.003	
114000	240	72	235.17	-79	5.7559	8.5266	43.83	597.43	.003	
115000	243	74	236.78	-83	5.5104	8.1076	49.68	599.47	.008	
116000	246	76	238.62	-85	5.2776	7.7052	50.88	601.79	.008	
117000	249	78	240.77	-86	5.0560	7.3158	50.49	604.50	.008	
118000	253	79	243.46	-87	4.8457	6.9340	48.43	607.87	.008	

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119000	254	80	245.63	-86	4.6467	6.5905	54.48	610.57	.004
120000	255	81	247.33	-85	4.4566	6.2774	58.39	612.68	.002
121000	256	82	247.72	-81	4.2755	6.0127	49.55	613.17	.002
122000	257	83	249.04	-84	4.1024	5.7388	49.08	614.72	.004
123000	258	84	251.04	-92	3.9372	5.4638	54.20	617.25	.005
124000	259	85	253.81	-96	3.7807	5.1893	62.55	620.65	.006
125000	260	86	256.08	-97	3.6311	4.9399	67.75	623.42	.007
126000	261	87	257.23	-91	3.4888	4.7250	66.01	624.82	.008
127000	262	88	257.99	-87	3.3523	4.5267	64.95	625.75	.007
128000	263	89	257.90	-82	3.2215	4.3516	65.39	625.64	.004
129000	264	90	257.69	-88	3.0958	4.1820	65.78	625.63	.006
130000	265	91	258.03	-90	2.9750	4.0167	66.09	625.80	.008
131000	266	92	258.52	-94	2.8592	3.8530	67.26	626.39	.008
132000	267	93	259.58	-100	2.7482	3.6884	69.82	627.67	.007
133000	268	94	260.85	-104	2.6419	3.5265	72.28	629.20	.005
134000	269	95	262.57	-106	2.5406	3.3709	74.50	631.27	.003
135000	270	96	264.22	-107	2.4432	3.2214	76.42	633.25	.003
136000	271	97	265.15	-101	2.3505	3.0883	75.19	634.37	.009
137000	272	98	266.08	-96	2.2613	2.9607	73.97	635.48	.009
138000	273	99	265.70	-95	2.1756	2.8526	74.01	635.03	.016
139000	274	100	265.06	-95	2.0932	2.7511	74.30	634.26	.017
140000	275	101	264.62	-100	2.0137	2.6511	72.51	633.73	.014
141000	276	102	264.29	-107	1.9371	2.5535	82.58	633.33	.012
142000	277	103	264.15	-114	1.8635	2.4577	86.82	633.16	.011
143000	278	104	264.76	-119	1.7927	2.3589	87.65	633.90	.008
144000	279	105	265.38	-123	1.7246	2.2641	88.48	634.64	.008
145000	280	106	266.15	-124	1.6595	2.1722	89.65	635.56	.007
146000	281	107	267.03	-123	1.5949	2.0834	91.16	636.42	.007
147000	282	108	267.92	-123	1.5368	1.9983	92.55	637.67	.007
148000	283	109	268.08	-127	1.4731	1.9222	95.72	637.86	.002
149000	284	110	268.09	-132	1.4236	1.8500	99.22	637.88	.001
150000	285	111	268.11	-136	1.3703	1.7805	102.72	637.90	.001
151000	286	112	269.01	-141	1.3192	1.7084	104.79	638.96	.002
152000	287	113	270.00	-145	1.2700	1.6387	106.70	640.14	.002
153000	288	114	270.98	-150	1.2227	1.5719	108.62	641.31	.002
154000	289	115	271.89	-150	1.1775	1.5087	111.29	642.38	.002
155000	290	116	272.76	-148	1.1341	1.4485	114.27	643.41	.002
156000	291	117	273.63	-146	1.0923	1.3907	117.24	644.43	.002
157000	292	118	273.90	-145	1.0521	1.3381	119.57	644.74	.002
158000	293	119	272.68	-146	1.0132	1.2945	120.34	643.31	.003
159000	294	120	271.46	-147	.9758	1.2523	121.11	641.87	.003
160000	295	121	270.24	-148	.9398	1.2115	121.87	640.43	.003
161000	296	122	269.61	-157	.9048	1.1692	125.36	639.68	.004
162000	297	123	269.27	-171	.8711	1.1270	130.19	639.28	.005
163000	298	124	268.93	-165	.8386	1.0863	135.02	638.87	.005
164000	299	125	268.59	-192	.8073	1.0471	139.86	638.42	.005
165000	300	126	268.98	-206	.7773	1.0067	142.93	638.93	.002
166000	301	127	269.66	-210	.7484	.9668	145.31	639.74	.001
167000	302	128	270.34	-214	.7205	.9286	147.69	640.54	.001
168000	303	129	271.01	-218	.6938	.8918	150.07	641.34	.001
169000	304	130	271.44	-221	.6680	.8574	152.27	641.85	.000
170000	305	131	271.36	-223	.6433	.8259	154.12	641.75	.002
171000	306	132	271.27	-225	.6195	.7956	155.97	641.64	.002
172000	307	133	271.18	-226	.5966	.7664	157.82	641.54	.002
173000	308	134	271.10	-228	.5745	.7383	159.67	641.44	.002
174000	309	135	270.92	-234	.5532	.7114	163.41	641.23	.002

ROCKET DATA

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175000	168	50	270.70	-2.44	.5327	.6856	168.18	640.97	.002
176000	169	51	270.47	-2.53	.5130	.6607	172.96	640.70	.002
177000	169	51	270.25	-2.62	.4940	.6368	177.74	640.44	.002
178000	170	52	270.03	-2.71	.4787	.6137	182.51	640.17	.002
179000	172	51	269.67	-2.78	.4580	.5916	186.26	639.75	.003
180000	173	47	269.17	-2.82	.4409	.5706	188.82	639.15	.007
181000	179	44	268.66	-2.86	.4244	.5503	191.37	638.55	.007
182000	183	41	268.15	-2.90	.4086	.5308	193.93	637.95	.007
183000	187	48	267.64	-2.94	.3933	.5120	196.49	637.34	.007
184000	191	34	267.14	-2.98	.3784	.4938	199.05	636.74	.007
185000	199	33	266.01	-3.10	.3643	.4771	202.78	635.40	.008
186000	205	31	264.41	-3.25	.3504	.4613	207.05	633.72	.008
187000	213	29	263.21	-3.41	.3370	.4461	211.32	632.04	.008
188000	222	27	261.81	-3.56	.3242	.4314	215.58	630.36	.008
189000	232	27	260.41	-3.71	.3118	.4171	219.85	628.67	.008
190000	242	27	259.01	-3.86	.2994	.4034	224.13	626.97	.008
190714	249	27	258.01	-3.97	.2917	.3939	227.16	625.76	.008

MAXIMUM ALTITUDE 201985

PAGE 2
B-205

ROCS 3

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RCKET DATA

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ROCS 3

ATTACHMENT 3

CO-RAWINSONDE FILE (SIGNIFICANT AND MANDATORY)

PASS 2

B-207

ALTITUDE (412)	WIND DIR (DEG.)	WIND SPD (KTS)	TEMPERATURE (DEG. F)	DEW POINT (DEG. F)	PRESSURE (MM)	REF. INDEX (N-UNITS)	REL. HUM. (%)
4.88	0	0	16.60	16.60	1018.30	356.72	100.00
107.97	212	10	21.20	21.20	983.19	367.67	100.00
1433.84	226	10	14.40	14.40	862.62	306.86	100.00
2076.18	232	11	12.20	10.43	799.56	275.59	88.94
2363.82	233	12	11.30	5.07	772.66	251.24	65.48
2765.91	233	12	9.40	-50	718.94	227.02	53.76
3184.36	209	14	7.40	2.31	700.35	227.90	70.04
3623.93	208	15	5.70	-4.42	680.18	210.41	48.05
3668.50	204	14	3.30	-3.55	660.12	208.25	60.69
3900.32	198	13	3.90	-23.36	641.57	184.12	11.48
4373.75	195	14	1.70	-23.71	605.27	175.33	13.01
5184.53	232	19	-5.10	-20.63	546.67	164.39	28.22
6322.50	244	19	-13.50	-34.98	472.06	142.79	14.31
6602.43	250	20	-16.00	-21.07	454.68	143.62	44.78
7469.68	242	27	-21.80	-40.84	405.18	126.09	15.84
7720.53	242	28	-24.10	-34.15	387.89	122.88	38.64
8100.28	242	29	-26.10	-45.24	371.76	117.41	14.46
8427.27	243	31	-28.40	-34.08	354.59	114.53	57.77
8978.05	245	32	-32.10	-44.43	328.96	106.64	27.89
9726.90	249	29	-38.40	-52.87	293.44	97.30	19.86
10911.19	248	31	-47.20	-58.05	248.21	85.41	27.14
12381.90	268	29	-59.90	-67.58	197.66	71.98	35.14
12692.06	268	32	-60.60	99.90	188.12	68.68	999.00
14607.55	267	37	-65.90	99.90	142.23	53.25	999.00
14643.37	263	38	-63.90	99.90	137.20	50.68	999.00
14965.16	257	38	-64.00	99.90	130.22	48.32	999.00
17233.61	260	27	-77.30	99.90	88.91	35.23	999.00
18897.58	254	13	-77.20	99.90	66.72	26.49	999.00
19240.20	246	15	-77.20	99.90	62.90	24.91	999.00
19560.20	258	17	-73.70	99.90	59.52	23.16	999.00
20524.18	257	13	-71.60	99.90	50.60	19.48	999.00
21956.46	258	18	-61.50	99.90	40.7	14.67	999.00
23930.12	251	19	-60.70	99.90	29.19	10.66	999.00
24974.05	259	21	-57.90	99.90	24.75	8.92	999.00
25752.40	260	26	-51.50	99.90	21.93	7.68	999.00
27418.86	260	28	-52.80	99.90	12.00	5.92	999.00
30390.43	261	36	-46.50	99.90	10.84	3.71	999.00
31267.98	250	36	-46.80	99.90	9.51	3.26	999.00
32334.12	245	36	-52.50	99.90	8.09	2.85	999.00
32820.56	243	36	-53.20	99.90	7.51	2.65	999.00
34481.99	246	41	-41.60	99.90	5.86	1.96	999.00
34962.74	999	999	-38.20	99.90	5.46	1.80	999.00

ROCS 3

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ALTIITUDE WIND DIR WIND SPD TEMPERATURE DEW POINT PRESSURE REL. HUMID.
(FT) (DEG.) (KTS) (DEG. C) (DEG. C) (INCHES) (%)

161.30	212	5	18.98	18.98	1000.00	100.00
605.25	211	10	19.42	19.32	950.00	99.39
1070.19	222	11	16.51	16.51	900.00	99.99
1556.21	224	10	14.04	13.14	850.00	94.51
2067.89	232	11	12.22	10.44	800.00	88.91
2608.12	232	12	10.52	4.91	750.00	68.21
3181.16	209	14	7.58	2.22	700.00	69.77
3785.60	202	14	3.62	-14.12	650.00	34.44
4433.61	201	14	1.01	-23.97	600.00	13.36
5124.90	237	19	-4.73	-21.01	550.00	26.78
5866.51	238	19	-10.13	-31.07	500.00	16.13
6608.90	250	21	-16.45	-32.92	450.00	58.14
7346.52	242	28	-22.48	-38.86	400.00	22.57
8112.14	243	31	-29.14	-35.60	350.00	53.40
8995.38	248	29	-37.39	-50.22	300.00	24.93
10822.11	248	30	-46.88	-52.84	250.00	26.82
12266.09	267	29	-59.33	-67.08	200.00	35.01
13026.92	260	35	-61.96	99.90	175.00	992.00
14045.16	264	36	-64.52	99.90	150.00	999.00
15158.04	256	32	-65.95	99.90	125.00	992.00
16482.56	250	34	-74.43	99.90	100.00	999.00
17770.89	254	20	-75.91	99.90	80.00	992.00
18540.82	252	16	-76.89	99.90	70.00	999.00
19422.60	256	17	-74.21	99.90	60.00	992.00
20499.48	257	14	-70.92	99.90	50.00	999.00
21849.51	258	18	-61.50	99.90	40.00	992.00
23636.10	252	18	-60.06	99.90	30.00	999.00
24726.98	260	21	-52.98	99.90	25.00	992.00
26209.96	258	26	-51.81	99.90	20.00	999.00
28022.48	252	33	-51.58	99.90	15.00	992.00
30735.69	255	38	-46.52	99.90	10.00	999.00
33062.78	241	39	-50.32	99.90	7.00	992.00

PASS 2
B-210

ROCS 3

ROCS 3

ATTACHMENT 4
HAMDATA OUTPUT FILE

PASS 2

B-211

TEST NUMBER 000000
CAPT. LANGRISHAL GILES, FLORIDA
1515Z 18 JAN 1984

SOURCE 1001 INFORMATION FWN-104

1961268	10	3	11	0	10	4	-25	09.999-99.999-9282
1962276	10	14	6	7	6	5	-71	09.999-99.999-9285
2000224	13	12	10	9	9	7	-71	09.999-99.999-9285
2000224	13	12	10	9	9	7	-71	05.524+19.516+1265
2100236	14	11	11	8	12	5	-62	04.686+17.902+1288
2176247	18	6	18	7	16	4	-67	04.140+16.823+1292
2200249	17	6	14	6	16	5	-62	03.986+16.571+1292
2267273	17	2	18	1	17	3	-60	03.469+15.873+1293
2300271	16	1	16	0	16	6	-60	03.397+15.559+1293
2406260	21	5	20	4	20	6	-57	02.902+14.671+1295
2500253	23	10	20	7	22	4	-55	02.483+13.970+1296
2568256	25	7	25	6	25	9	-53	-12.234+13.539+1297
2600256	25	7	25	6	25	5	-53	-12.128+13.372+1297
2689251	27	9	25	9	25	6	-51	-11.858+12.914+1299
2700251	27	9	25	9	25	6	-51	-11.827+12.867+1299
2745252	30	10	29	9	28	7	-52	-11.707+12.683+1299
2800252	32	9	31	10	30	8	-48	-11.570+12.434+1301
2870255	32	11	31	8	31	14	-47	-11.414+12.175+1302
2900259	32	3	31	6	32	5	-47	-11.352+12.080+1302
3000256	32	5	32	8	32	10	-44	-11.165+11.774+1303
3100245	35	15	31	15	31	10	-49	-11.004+11.559+1300
3200247	34	9	27	13	31	8	-51	-18.628+01.352+1299
3300239	35	18	30	18	30	12	-45	-17.428+01.134+1303
3400237	36	19	28	19	30	12	-42	-16.413+09.665+0305
3500243	38	17	34	17	34	15	-37	-15.552+08.178+0308
3600253	41	13	37	12	39	15	-29	-14.823+06.893+0313
3700254	41	5	39	11	40	14	-25	-14.207+05.912+0316
3800251	36	17	34	12	34	12	-17	-13.679+05.013+0321
3841252	31	13	28	9	30	20	-15	-13.355+04.583+0322
3900254	30	8	27	8	29	20	-15	-13.228+04.360+0322
4000262	27	0	26	1	27	21	-14	-12.833+03.814+0323
4100272	24	-1	26	-1	24	23	-10	-12.490+03.293+0326
4181261	19	0	21	3	19	22	-7	-12.247+02.940+0327
4200252	17	3	18	5	16	23	-7	-12.193+02.874+0327
4300199	16	17	6	15	5	25	-9	-11.931+02.546+0326
4400183	23	25	-6	23	1	27	-8	-11.701+02.231+0327
4500183	29	31	-4	29	2	29	-5	-11.500+01.949+0328
4600185	29	24	13	29	3	32	-4	-11.323+01.714+0329
4700185	27	31	8	27	2	34	-1	-11.169+01.497+0331
4800182	25	27	-3	25	1	37	0	-11.033+01.317+0332
4900174	24	15	-9	24	-2	38	-3	-29.131-11.180+0329
5100160	26	26	-7	25	-9	45	-3	-27.118-19.166-1330
5200162	26	25	-6	25	-8	47	-2	-26.289-18.075-1330
5300167	26	25	-6	25	-6	50	-2	-25.557-17.145-1330
5500172	24	22	0	24	-1	58	-4	-34.335-15.615-1329
5700214	15	11	10	12	8	64	-10	-33.369-14.460-1325
5818194	18	16	6	18	5	61	-6	-31.742-14.883-1328
2051240	10	8	8	5	9	5	-67	05.000+18.454+1288
2467253	20	5	20	6	19	5	-58	03.000+14.849+1294
2626253	26	8	24	8	25	6	-51	-12.000+13.141+1299

PAGE 2
ROCS 3

0083247 54 15 51 15 47 -11.000+11.5411500
 4448246 46 19 51 20 50 11 -44 -17.000+01.063+1304
 3549750 40 13 36 14 38 15 -32 -15.000+07.214+0312
 4022420 20 4 26 5 27 20 -15 -13.000+04.051+0522
 4236211 15 14 8 13 8 24 9 -12.000+02.634+0326
 4244380 25 23 5 25 6 37 -1 -11.000+01.280+0331
 5065160 26 25 5 25 9 46 2 -27.000-19.004-1330
 5332169 26 25 4 26 5 34 3 -35.000-16.444-1330
 5508185 20 19 3 20 2 60 5 -34.000-15.202-1328
 5744242 14 6 13 6 17 68 -14 -43.000-14.035-1323

01

LAPE CANAVERAL AIS, FLORIDA
 1015Z 18 JAN 1984

ALT	HI	MDIR	MPS	TEMP	DEM	PT	PRESS	RH	
000042	212	002	189	189	189	10000	100		9
000184	211	005	194	193	193	09500	099		
000326	222	005	165	165	165	09000	059		
000474	274	005	140	131	131	08500	094		
000630	232	005	122	104	104	08000	088		
000794	237	006	105	049	049	07500	068		
000939	209	007	073	022	022	07000	069		
001154	202	007	036	14J	14J	06500	034		
001351	201	002	010	23R	23R	06000	013		
001567	237	009	04P	211	211	05500	026		
001788	238	009	10J	311	311	05000	016		
002032	250	010	16M	27R	27R	04500	058		
002299	242	014	22M	38Q	38Q	04000	022		ROCS 3
002594	243	015	29J	350	350	03500	053		
002924	248	014	37L	50K	50K	03000	024		
003300	248	015	46U	57Q	57Q	02500	026		
003738	262	014	59L	621	621	02000	035		
003991	260	018	61R	999	999	01750	999		
004280	264	018	64N	999	999	01500	999		
004620	266	019	65R	999	999	01250	999		
005023	250	017	74M	999	999	01000	999		
005416	254	010	75R	999	999	00800	999		
005651	252	008	76Q	999	999	00700	999		
005921	256	008	74K	999	999	00600	999		
006248	257	007	70R	999	999	00500	999		
006659	258	009	61N	999	999	00400	999		
007204	252	009	601	999	999	00300	999		
007552	260	010	57K	999	999	00250	999		
007988	258	013	51U	999	999	00200	999		
008356	252	016	51N	999	999	00150	999		
009368	255	019	46N	999	999	00100	999		
010077	241	020	50L	999	999	00070	999		9
ALT	HI	MDIR	MPS	TEMP	DEM	PT	PRESS	IR	
000001	000	000	166	166	166	101830	356		
000093	212	005	211	212	212	098319	367		
000437	226	005	143	144	144	086261	306		
000632	232	005	121	104	104	079955	275		
000720	233	006	113	050	050	077265	251		
000904	223	005	093	004	004	071893	227		

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HARDATA FILE

PAGE 2

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ROCS 3

000970	209	007	073	023	070025	227
001043	208	007	056	04M	068017	210
001118	204	007	033	03N	066012	208
001190	199	006	048	231	064126	184
001332	195	007	016	23F	060526	175
001580	237	009	051	200	054666	164
001927	244	009	13N	34R	047205	142
002014	250	010	161	211	045468	143
002276	242	013	210	400	040517	126
002374	242	014	24J	34J	038788	122
002468	242	014	26J	45K	037176	117
002573	243	015	28L	341	035459	114
002736	245	016	32J	44H	032896	106
002980	249	014	38L	52Q	029344	097
003325	248	015	47J	581	024820	085
003774	268	014	52Q	67N	019765	071
003868	268	016	600	999	018811	068
004323	267	019	65B	999	014222	053
004463	263	019	63Q	999	013720	050
004561	257	019	641	999	013022	048
005252	260	013	77L	999	008890	035
005260	254	004	770	999	006671	026
005864	246	007	77J	999	006289	024
006262	258	008	730	999	005951	023
006255	257	006	710	999	005059	019
006672	258	007	61N	999	003999	014
007293	251	009	600	999	002919	010
007612	259	010	57Q	999	002474	008
007849	260	013	51N	999	002193	007
008357	260	014	520	999	001692	005
009263	261	018	46N	999	001083	003
009530	250	018	46Q	999	000930	003
009655	245	018	52N	999	000809	002
010004	243	018	53J	999	000751	002
010510	246	021	410	999	000585	001
010656	249	014	38J	999	000546	001

PA65
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HANDATA FILE

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PAGE
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ROCS 3

ATTACHMENT 5
ROCOB OUTPUT FILE

PASS 2

B-217

KRXK 18151 01984 74794 91011 63111
 20527 27013 97777 21567 24014 91796 27362 28017 91657 23560
 27016 91556 24557 26021 91467 28555 25023 91397 26553 26026
 91337 27551 23027 91787 28548 25032 91243 29547 26032 91208
 30544 26032 91177 31549 25035 91156 32551 25034 91135 33545
 24035 91113 34542 24036 92967 35537 24038 92818 36529 25041
 92689 37525 25041 92591 38517 25036 92501 39515 25030 92436
 40514 27027 92380 41510 27024 92379 42507 25017 92287 43509
 20016 92255 44508 18023 92223 45505 18029 92195 46504 19029
 92171 47501 19027 92150 48000 18025 92132 49503 17024 92118
 50505 16026 92105 51503 16026 93917 52502 16026 93808 53502
 17026 93715 54503 17026 93633 55504 18024 93562 56506 19019
 93499 57510 21015 93446 58515 25014 93400
 11567 50505 24010 11558 30236 25020 11551 26262 25026 11549
 10308 24034 11544 07331 24036 11532 05354 25040 11515 03392
 26028 11508 02423 21015 11501 01478 18025 22502 07502 16026
 22503 05533 17026 22505 04550 19020 22514 03573 24014

ROCS 3

ATTACHMENT 6
PROGRAM LISTING

PASS 2

B-221

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C KROKRETEP
C PASS 2 OF THE KROCKET REDUCTION PROGRAM. OUTPUTS THE HAMDATA
C FILE AND THE TELETYPE (CODEX) FILE.
C
C INCLUDE "H41452"
C
C DATA IOU1,IOU2,IOU3,IOU4,1,2,3,4/
C H414 F1,1,69897,1,47712,1,30102,1,0,
C * 0.84509,0.69897,0.47712,0.30102,0.0,
C * 0.1549,-1.30102,-1.52287,-1.69897,-2.0,
C * 3.1549,-2.30102,-2.52287,-2.69897,-3.0,
C * 3.1549,-3.30102,-3.52287,-3.69897,-4.0,
C * -0.1549,-4.30102,-4.52287,-4.69897,-5.0/
C DATA IAL,IKI,IKR,IEM,ICW/9,1,1,31,1/
C H414 IND,IND,6,6,6,6
C
C INITIALIZE THE FILES
C
C DELETE "HAMDATA"
C DELETE "CODEDATA"
C TYPE "132X136"
C
C PAUSE "MOUNT REDUCTION DISK ON DRIVE 1"
C CALL INIT("DPI")
C
C READ SAVE FILE
C
C
C OPEN 20,"KODASAVE",LEN=80,AII="1"
C READ(20) IHL,IM1,IM2,IM3,IM4,IM5,IM6,IM7,IM8,IM9,IM10,IM11,IM12,IM13,IM14,IM15,IM16,IM17,IM18,IM19,IM20,IM21,IM22,IM23,IM24,IM25,IM26,IM27,IM28,IM29,IM30,IM31,IM32,IM33,IM34,IM35,IM36,IM37,IM38,IM39,IM40,IM41,IM42,IM43,IM44,IM45,IM46,IM47,IM48,IM49,IM50,IM51,IM52,IM53,IM54,IM55,IM56,IM57,IM58,IM59,IM60,IM61,IM62,IM63,IM64,IM65,IM66,IM67,IM68,IM69,IM70,IM71,IM72,IM73,IM74,IM75,IM76,IM77,IM78,IM79,IM80,IM81,IM82,IM83,IM84,IM85,IM86,IM87,IM88,IM89,IM90,IM91,IM92,IM93,IM94,IM95,IM96,IM97,IM98,IM99,IM100,IM101,IM102,IM103,IM104,IM105,IM106,IM107,IM108,IM109,IM110,IM111,IM112,IM113,IM114,IM115,IM116,IM117,IM118,IM119,IM120,IM121,IM122,IM123,IM124,IM125,IM126,IM127,IM128,IM129,IM130,IM131,IM132,IM133,IM134,IM135,IM136,IM137,IM138,IM139,IM140,IM141,IM142,IM143,IM144,IM145,IM146,IM147,IM148,IM149,IM150,IM151,IM152,IM153,IM154,IM155,IM156,IM157,IM158,IM159,IM160,IM161,IM162,IM163,IM164,IM165,IM166,IM167,IM168,IM169,IM170,IM171,IM172,IM173,IM174,IM175,IM176,IM177,IM178,IM179,IM180,IM181,IM182,IM183,IM184,IM185,IM186,IM187,IM188,IM189,IM190,IM191,IM192,IM193,IM194,IM195,IM196,IM197,IM198,IM199,IM200,IM201,IM202,IM203,IM204,IM205,IM206,IM207,IM208,IM209,IM210,IM211,IM212,IM213,IM214,IM215,IM216,IM217,IM218,IM219,IM220,IM221,IM222,IM223,IM224,IM225,IM226,IM227,IM228,IM229,IM230,IM231,IM232,IM233,IM234,IM235,IM236,IM237,IM238,IM239,IM240,IM241,IM242,IM243,IM244,IM245,IM246,IM247,IM248,IM249,IM250,IM251,IM252,IM253,IM254,IM255,IM256,IM257,IM258,IM259,IM260,IM261,IM262,IM263,IM264,IM265,IM266,IM267,IM268,IM269,IM270,IM271,IM272,IM273,IM274,IM275,IM276,IM277,IM278,IM279,IM280,IM281,IM282,IM283,IM284,IM285,IM286,IM287,IM288,IM289,IM290,IM291,IM292,IM293,IM294,IM295,IM296,IM297,IM298,IM299,IM300,IM301,IM302,IM303,IM304,IM305,IM306,IM307,IM308,IM309,IM310,IM311,IM312,IM313,IM314,IM315,IM316,IM317,IM318,IM319,IM320,IM321,IM322,IM323,IM324,IM325,IM326,IM327,IM328,IM329,IM330,IM331,IM332,IM333,IM334,IM335,IM336,IM337,IM338,IM339,IM340,IM341,IM342,IM343,IM344,IM345,IM346,IM347,IM348,IM349,IM350,IM351,IM352,IM353,IM354,IM355,IM356,IM357,IM358,IM359,IM360,IM361,IM362,IM363,IM364,IM365,IM366,IM367,IM368,IM369,IM370,IM371,IM372,IM373,IM374,IM375,IM376,IM377,IM378,IM379,IM380,IM381,IM382,IM383,IM384,IM385,IM386,IM387,IM388,IM389,IM390,IM391,IM392,IM393,IM394,IM395,IM396,IM397,IM398,IM399,IM400,IM401,IM402,IM403,IM404,IM405,IM406,IM407,IM408,IM409,IM410,IM411,IM412,IM413,IM414,IM415,IM416,IM417,IM418,IM419,IM420,IM421,IM422,IM423,IM424,IM425,IM426,IM427,IM428,IM429,IM430,IM431,IM432,IM433,IM434,IM435,IM436,IM437,IM438,IM439,IM440,IM441,IM442,IM443,IM444,IM445,IM446,IM447,IM448,IM449,IM450,IM451,IM452,IM453,IM454,IM455,IM456,IM457,IM458,IM459,IM460,IM461,IM462,IM463,IM464,IM465,IM466,IM467,IM468,IM469,IM470,IM471,IM472,IM473,IM474,IM475,IM476,IM477,IM478,IM479,IM480,IM481,IM482,IM483,IM484,IM485,IM486,IM487,IM488,IM489,IM490,IM491,IM492,IM493,IM494,IM495,IM496,IM497,IM498,IM499,IM500,IM501,IM502,IM503,IM504,IM505,IM506,IM507,IM508,IM509,IM510,IM511,IM512,IM513,IM514,IM515,IM516,IM517,IM518,IM519,IM520,IM521,IM522,IM523,IM524,IM525,IM526,IM527,IM528,IM529,IM530,IM531,IM532,IM533,IM534,IM535,IM536,IM537,IM538,IM539,IM540,IM541,IM542,IM543,IM544,IM545,IM546,IM547,IM548,IM549,IM550,IM551,IM552,IM553,IM554,IM555,IM556,IM557,IM558,IM559,IM560,IM561,IM562,IM563,IM564,IM565,IM566,IM567,IM568,IM569,IM570,IM571,IM572,IM573,IM574,IM575,IM576,IM577,IM578,IM579,IM580,IM581,IM582,IM583,IM584,IM585,IM586,IM587,IM588,IM589,IM590,IM591,IM592,IM593,IM594,IM595,IM596,IM597,IM598,IM599,IM600,IM601,IM602,IM603,IM604,IM605,IM606,IM607,IM608,IM609,IM610,IM611,IM612,IM613,IM614,IM615,IM616,IM617,IM618,IM619,IM620,IM621,IM622,IM623,IM624,IM625,IM626,IM627,IM628,IM629,IM630,IM631,IM632,IM633,IM634,IM635,IM636,IM637,IM638,IM639,IM640,IM641,IM642,IM643,IM644,IM645,IM646,IM647,IM648,IM649,IM650,IM651,IM652,IM653,IM654,IM655,IM656,IM657,IM658,IM659,IM660,IM661,IM662,IM663,IM664,IM665,IM666,IM667,IM668,IM669,IM670,IM671,IM672,IM673,IM674,IM675,IM676,IM677,IM678,IM679,IM680,IM681,IM682,IM683,IM684,IM685,IM686,IM687,IM688,IM689,IM690,IM691,IM692,IM693,IM694,IM695,IM696,IM697,IM698,IM699,IM700,IM701,IM702,IM703,IM704,IM705,IM706,IM707,IM708,IM709,IM710,IM711,IM712,IM713,IM714,IM715,IM716,IM717,IM718,IM719,IM720,IM721,IM722,IM723,IM724,IM725,IM726,IM727,IM728,IM729,IM730,IM731,IM732,IM733,IM734,IM735,IM736,IM737,IM738,IM739,IM740,IM741,IM742,IM743,IM744,IM745,IM746,IM747,IM
```

REAL MONTH
 DOUBLE PRECISION GRAF,RE
 INTEGER STATIONID(15),RAWINDAY,RAWINMONTH,RAWINYEAR
 COMMON/UA1A/X,X,Z,IND,IND1,IA1,STATIONID,IA1,IAK,
 * ICM,ICW,IH1,IH2,IM1,IM2,RAWINDAY,RAWINMONTH,RAWINYEAR,
 * INTYE2(3),IIR,IIR1,IIR2,IMONTH,IYE,GRAT,RE,IOU1,IOU2,IOU3,
 * IOU4,PL(35),H,UA,UT,1,UT,P,F,IMON,STANUM

ROCS 3

PASS 2
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ROCS 3

PAGE 3

BACKSPACE 1002
GOTO 115

IF (J.EQ.24) GOTO 204

BACKSPACE 1002

BACKSPACE 1002
READ(1002)R,X,Y,UX,UY,1,UT,P,F
H=H/10.

CALL GUD11

REMAIN 1002

START CONSTANT PRESSURE LEVELS

J=1

READ(1002)H1,X1,Y1,UX1,UY1,11,UT1,P1,F1
IF (P1.GE.999.) GOTO 204

IF (J.EQ.24) GOTO 204
IF (J.EQ.29) GOTO 202

IF (P1.GT.F1) GOTO 202

GOTO 203

J=J+1

GOTO 201

IF (P1.GT.F1) GOTO 205

H1=H2

X1=X2

Y1=Y2

UX1=UX2

UY1=UY2

11=12

UT1=UT2

P1=P2

F1=F2

GOTO 206

RAT=(P1-P2)/(F1-F2)

H=VALUE(RAT,H1,H2)

X=VALUE(RAT,X1,X2)

Y=VALUE(RAT,Y1,Y2)

UX=VALUE(RAT,UX1,UX2)

UY=VALUE(RAT,UY1,UY2)

P=VALUE(RAT,P1,P2)

UT=VALUE(RAT,UT1,UT2)

F=VALUE(RAT,F1,F2)

CONVERT GEOMETRIC HEIGHT TO GEOPOTENTIAL HEIGHT

H=(RAT*(RE*H))/(RE+H/10.

P=P1(J)

CALL GUD11

GOTO 204

CLOSE 1002

CALL KURAWIN

0105E 10114

RETURN

END

ROCS 3

PASS 2

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RQCS 3

```
5 IF (1.EQ.1) GO10 6
   J5=J
   J2=N
   GO10 10
6   F5=0
   J1=N
   D=J5
   K=0
10  CONTINUE
   J1K=IRND(DIR)
   CALL DEFZERO(IUR,3,GUT(1))
   WRITE(1004,110)IRND(H),OUT,IRND(SPD),IRND(UY),IRND(UX),
   * IRND(Y),IRND(X),IRND(ABS(F)),IRND(T),IRND(TC),FS,I1,I5,I2,
   * IRND(US)
110  FORMAT(15,31,I3,I4,I4,I3,I4,I3,2(F5.3,A2),I3)
      EH=1
      RETURN
      END
```

PAGE 2

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PAGE 2

14: 2:42 29 MAR, 1984 RUCNET REDUCTION PASS #2 - CONT

```

SUBROUTINE KORAWIN
  INCLUDE 'DATAS2'
  INTEGER OUTARRAY(27)

  READS OF KAWINSUNDE DATA FOR INPUT TO THE ARCHIVING AND
  PUBLICATION FORMATTING PROGRAM. OUTPUTS MANDATORY AND
  SIGNIFICANT DATA ONLY.

  WRITE(IQU4,1) (STATIONID(I), I=1,15), IH1, IH2, IM1, IM2, KAWINDAY,
  MONTH, KAWINLEAK
  FORMAT(4X, '01'//35A2//411'2'2X, I2, 1X, A4, 1X, I4/)

  OPEN MANDATORY FILE, WRITE MANDATORY COLUMN HEADINGS, READ
  AND WRITE MANDATORY DATA.

  WRITE(IQU4,2)
  FORMAT('ALT MT WDIR MPS TEMP DEW PT PRESS RH',
  * 180, '9')
  OPEN 5, 'DP1:MANDATORY', ATT='R', LEN=24
  DO 100 I=1,300
    READ(5,END=110) XH, IXD, IXS, XI, XDP, XP, XRH
    XH=XH#0.3048
    IXH=XH/100.
    IXH2=AMOD(XH,100.)
    IXS=IXS#6.514792
    XI=XI#10.
    JTD=XDP#10.
    XDP=XDP#10.
    XRH=XRH#10.
    XRH=XRH#10.
    CALL TSIGN(JTD, JTD1)
    CALL LEFTZERO(IXH1, 4, OUTARRAY(11))
    CALL LEFTZERO(IXH2, 2, OUTARRAY(5))
    CALL LEFTZERO(IXD, 3, OUTARRAY(23))
    CALL LEFTZERO(IXS, 3, OUTARRAY(10))
    CALL LEFTZERO(JTD, 2, OUTARRAY(13))
    OUTARRAY(15)=JTD1
    CALL LEFTZERO(JTD, 2, OUTARRAY(16))
    OUTARRAY(18)=JTD1
    CALL LEFTZERO(XRH, 3, OUTARRAY(24))
    CALL LEFTZERO(XRH, 3, OUTARRAY(24))
    WRITE(IQU4,3) (OUTARRAY(J), J=1,26)
    FORMAT(611,3X,311,2X,311,3X,211,K1,5X,211,R1,4X,511,
  * 2X,311,179, '1')
  100 CONTINUE
  110 CLOSE 5

  OPEN SIGNIFICANT FILE, WRITE SIGNIFICANT COLUMN HEADINGS,
  READ AND WRITE SIGNIFICANT DATA.

  OPEN 5, 'DP1:SIGNIFICANT', ATT='R', LEN=28
  WRITE(IQU4,4)
  FORMAT('ALT MT WDIR MPS TEMP DEW PT PRESS IR',
  * 180, '9')
  DO 200 I=1,300
    READ(5,END=210) XH, IXD, IXS, XI, XDP, XP, XRH, XH

```

ROCS 3

200	CONTINUE
210	CLOSE 5
	RETURN
	END

PASS 2

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AD-A163 634

IRIG STANDARDS FOR RANGE METEOROLOGICAL DATA REDUCTION
PART 2 ROCKETSONDE(U) RANGE COMMANDERS COUNCIL WHITE
SANDS MISSILE RANGE NM INTER-R.. DEC 85

5/5

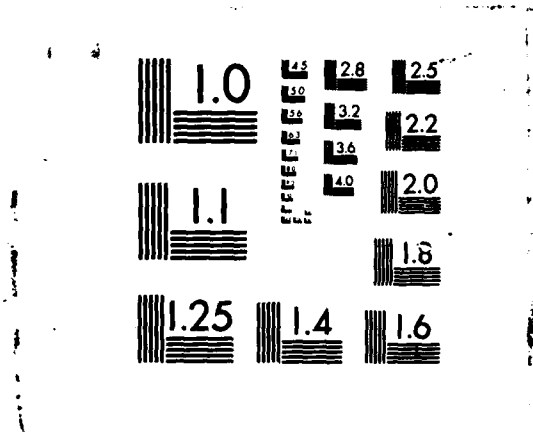
UNCLASSIFIED

IRIG-STANDARD-352-85-5

F/G 4/1

NL

END



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

HHZ11(3) = ' /'
 1H=HH(INDX)/1000
 HHZ11(2) = MOD(1H,10)+60K
 HHZ11(1) = 1H/10+60K

DDFF WIND DIRECTION AND SPEED

1F (1FF(INDX),61,998)GOTO 1001A
 IWORKN=FFF('NOX')
 DDFF(3) = MOD(IWORKN,10)+60K
 IWORKN=IWORKN/10
 DDFF(4) = MOD(IWORKN,10)+60K
 DDFF(3) = IWORKN/10+60K
 GOTO 1001B

10011 DDFF(5) = ' /'

DDFF(4) = ' /'

DDFF(3) = ' /'
 1F (1D(INDX),61,998)GOTO 1000B
 IWORKD=DD(INOX)+5

1F (IWORKD,61,360)IWORKD=IWORKD-360
 IWORKD=IWORKD/10

1F (IWORKD,10,6)IWORKD=16

DDFF(2) = MOD(IWORKD,10)+60K

DDFF(1) = IWORKD/10+60K

GOTO 10013

DDFF(2) = ' /'

DDFF(1) = ' /'

DDFF(1) = ' /'

DDFF(1) = ' /'
 DDFF(1) = ' 9'
 IF (DDFF(INDX),61,998)GOTO 10016
 TESTP=100

DD 10014 IP=1,10

IF (DDFF(INDX),61,TESTP)GOTO 10015

TESTE=TESTP/10

CONTINUE

GOTO 10016

10015 IF=IP-1

IWORKD=DDFF(INDX)+10.5*IP+0.5

IP=IP+60K

DDFF(2) = IP

DDFF(5) = MOD(IWORKD,10)+60K

IWORKD=IWORKD/10

DDFF(4) = MOD(IWORKD,10)+60K

DDFF(3) = IWORKD/10+60K

GOTO 15

DDFF(5) = ' /'

DDFF(4) = ' /'

DDFF(3) = ' /'

DDFF(2) = ' /'

CONTINUE

DD 200 I=1,5

IWORKD=IWORKD+1

DD (IWORKD)=HHZ11(1)

DD 210 I=1,5


```

WORK=WORK+1
OUT(MORD)=OUT(F)
DO 220 I=1,5
  MORD=MORD+1
OUT(MORD)=MORD+1
CONTINUE
180 I=1
110 I=2
IF (.NOT. FINIS) GO TO 26
BLCKDE (RUCALINE,1)NI
FORMAT (I4)
NT=M/10
KK=1
IF (STANUM.EQ.1) KK=2
IF (STANUM.EQ.9) KK=3
IF (STANUM.EQ.12) KK=4
NT=1YR-1000
CALL LEFTZERU(1DA,2,00(1))
CALL LEFTZERU(NT,3,00(3))
CALL LEFTZERU(1MON,2,00(6))

```

```
WRITE (1003,20004)
```

```
FORMAT ('I')
```

```
WRITE (1003,20002) (UD(I),I=1,7),NY, (INTIND(I,KK),I=1,3)
WRITE (1004,20002) (OD(I),I=1,7),NY, (INTIND(I,KK),I=1,3)
FORMAT (4X, 'REAX' 511,1X,211,13,3R2, ' 91011 63111')
```

```
180 I=1
```

```
IEND=50
```

```
WRITE (1003,20001) (OUT(I),I=1,NB,IEND)
```

```
WRITE (1004,20001) (OUT(I),I=1,NB,IEND)
```

```
180 I=180+50
```

```
IEND=IEND+50
```

```
IE (IEND-180, MORD) IEND=MORD
```

```
IF (180.GT. MORD) GO TO 300
```

```
FORMAT (4X, SR1, 1X, SR1, 1X, SR1, 1X, SR1, 1X, SR1, 1X, SR1,
```

```
1X, SR1, 1X, SR1, 1X, SR1, 1X, SR1)
```

```
CLOSE (1001)
```

```
CALL HANDL
```

```
WRITE (1003,20003)
```

```
FORMAT (4X, 'JJJ')
```

```
RETURN
```

```
END
```

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```

SUBROUTINE MANUL
  INCLUDE 'DATA62'
  INTEGER OUI(400),SIG(6)
  DATA SIR/11,27,33,44,55,66/
  OPEN 1002, TAPE 2, LEN=36
  IF 1
    READ(1002)H1,X1,Y1,UX1,UY1,I1,UF1,P1,F1
    READ(1002,END=250)H2,X2,F2,UX2,UY2,I2,UF2,P2,F2
    IF (P1.GE.998.)GO10 104
    IF (F2.GE.998.)GO10 100
    IF (PL.J1.LE.F1)GO10 103
    J=J+1
    GO10 101
  103 IF (PL(J),GT.F2)GO10 105
  104 H1=H2
    X1=X2
    Y1=Y2
    I1=I2
    F1=F2
    GO10 100
  105 RAI=(EL(J)-F2)/Z(P1-F2)
    H=VALUE(RAI,H1,H2)
    X=VALUE(RAI,X1,X2)
    Y=VALUE(RAI,Y1,Y2)
    I=VALUE(RAI,I1,I2)
    DIR=WDIR(X,Y)
    SPDE=SPD(X,Y)
    IF (X.LT.998.)GO10 202
    DIR=999.
    SPDE=999.
    GO10 206
  202 X=-X
    Y=-Y
  206 IF (I.GE.999.)I=9999.
    J=J-27115
    JS=6
    IF (J.LT.31)JS=5
    IF (J.LT.26)JS=4
    IF (J.LT.21)JS=3
    IF (J.LT.16)JS=2
    IF (J.LT.10)JS=1
    IF (I.GT.9000.)GO10 218
    IF 0.5-I
    IF (I.LE.99)GO10 217
    NA=6
    I1=I-100
    GO10 218
  217 IF (I1.LE.0)GO10 219
    NA=5
    GO10 218
  219 NA=0

```

```

11=-11
SIGNIF (CAN) INDICATOR, TEMPERATURE INDICATOR, AND TEMPERATURE
218 CALL LEFTZERO(SIG(JS),2,OUT(M))
DO 300 I=1,2
OUT(M)=OUT(M)+60K
M=M+1
300 IF (1,GT,9000,) GO TO 221
OUT(M)=KA+60K
M=M+1
CALL LEFTZERO(11,2,OUT(M))
DO 310 I=1,2
OUT(M)=OUT(M)+60K
M=M+1
310 GO TO 220
221 DO 320 I=1,3
OUT(M)= " L
M=M+1
220 CONTINUE
FI=,5
IF (PL(J),LT,-1.) FI=.005
IF (PL(J),LT,-2.) FI=.0005
IF (PL(J),LT,-3.) FI=.00005
IF (PL(J),LT,-4.) FI=.000005
IPS=(10.**PL(J)+FI)*(10.**JS/10.)
IH=(IGRA7*(RE+H)/ZIRE+H)/15./100.
IF (JS.EQ.6) IH=IH/10

```

ROCS 3

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PRESSURE AND HEIGHT

```

CALL LEFTZERO(IPS,2,OUT(M))
DO 330 I=1,2
OUT(M)=OUT(M)+60K
M=M+1
330 CALL LEFTZERO(IH,3,OUT(M))
DO 340 I=1,3
OUT(M)=OUT(M)+60K
M=M+1
340 IH=(IHR+S.)/10.
ISS=SPD+.5
IF (IDR,GT,998,OR,ISS,GT,998) GO TO 233
IF (100.EQ,01100=36

```

WIND DIRECTION AND SPEED

```

CALL LEFTZERO(IDR,2,OUT(M))
DO 350 I=1,2
OUT(M)=OUT(M)+60K
M=M+1
350 CALL LEFTZERO(ISS,4,OUT(M))
DO 360 I=1,3
OUT(M)=OUT(M)+60K
M=M+1
360 GO TO 243

```

PASS 2

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PAGE 3

14: 4:31 29 MAR, 1984 ROCKET REDUCTION PASS #2 - MANDOL

RQCS 3

```
ROUTINE TO PAD NUMBERS WITH LEADING ZEROS
SUBROUTINE LEFTZER(NUMBER,DIGITS,OUTPUT)
INTEGER OUTPUT(5),DIVISOR,HOLD,D,DIGITS
GENERATES AN ARRAY OF SINGLE DIGITS FROM SUCCESSIVE DIVISIONS.
VALID FOR INTEGERS IN THE RANGE ZERO TO 2** (WORDSIZE).
DIVISOR=16** (DIGITS-1)
HOLD=NUMBER
DO 100 INDEX=1,DIGITS
  OUTPUT(INDEX)=HOLD/DIVISOR
  HOLD=HOLD(HOLD,DIVISOR)
  DIVISOR=DIVISOR/10
100 CONTINUE
RETURN
END
```

PASS 2

B-240

PAGE

141 5: 9 29 MAR, 1984 ROCKET REDUCTION PASS #2 - LEFTZERO


```

FUNCTION VALUE(K,A,B)
VALUE=K*(A-B)+B
IF (A.EQ.999.9) OR (B.EQ.999.9) VALUE=999.9
RETURN
END

```

ROCS 3

PASS 2
B-242

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ROCS 3

FUNCTION WDIR(XA,Y)
IF (XA.NE.G.G) GO TO 100
IF (Y.NE.O.O) WDIR=350.O
IF (Y.LT.G.G) WDIR=180.O
RETURN
100
B=614N(Y/XA)*57.27578
WDIR=70.O-B
IF (XA.LE.G.G) WDIR=90.O-B
IF (WDIR.LT.O.O) WDIR=350.O
RETURN
END

PASS 2

R-243

PAGE

ROULET REDUCTION PASS #2 - W DIR

14: 5:47 29 MAR 1984


```
FUNCTION WSPH(X,Y)  
  WSPH=(X*Y*Y)*0.5  
  IF (X,EU,999,9,OR,1,EU,999,9) WSPH=999.  
  RETURN  
END
```

ROCS 3

PASS 2
B-244

PAGE
1

ROCKET REDUCTION PASS #2 WSPH

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END

FILMED

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DTIC